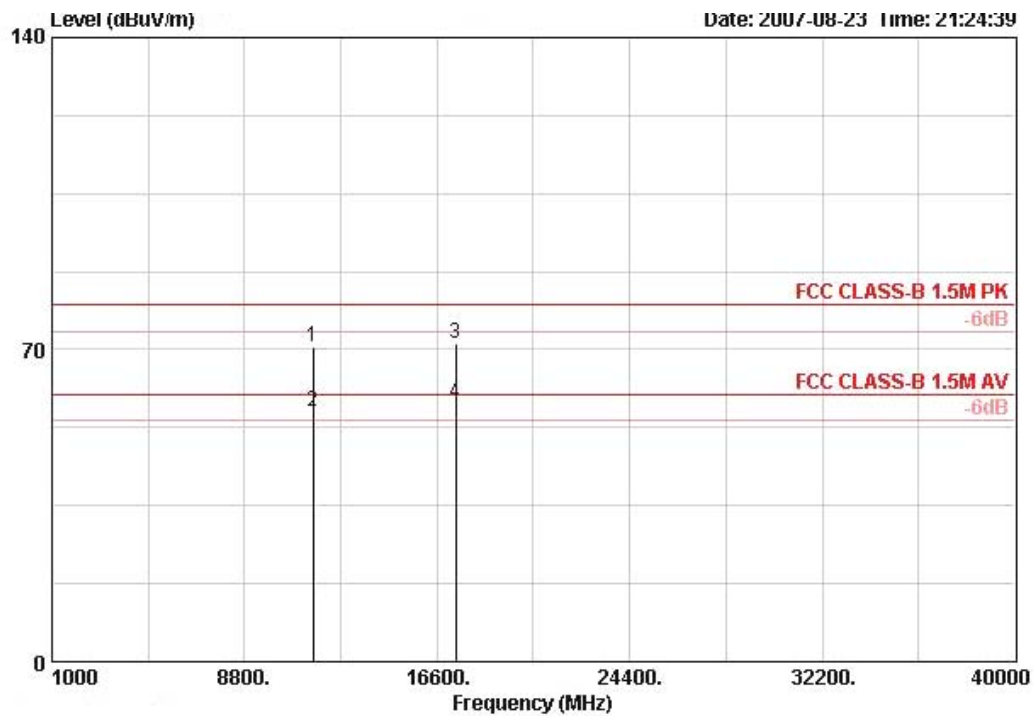


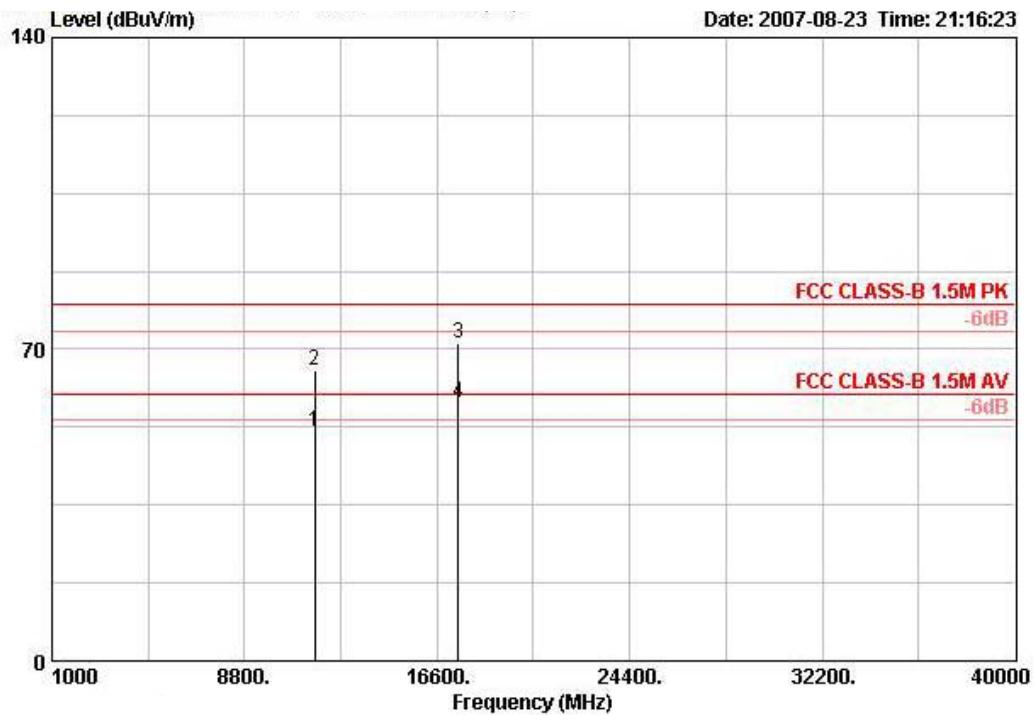
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11567.700	70.51	-9.49	80.00	51.04	39.47	13.11	33.11	PEAK	100	238
2 @	11567.800	55.98	-4.02	60.00	36.51	39.47	13.11	33.11	AVERAGE	100	238
3 @	17348.000	71.52	-8.48	80.00	46.88	41.65	15.39	32.40	PEAK	100	98
4 @	17356.000	57.99	-2.01	60.00	33.35	41.65	15.39	32.40	AVERAGE	100	98

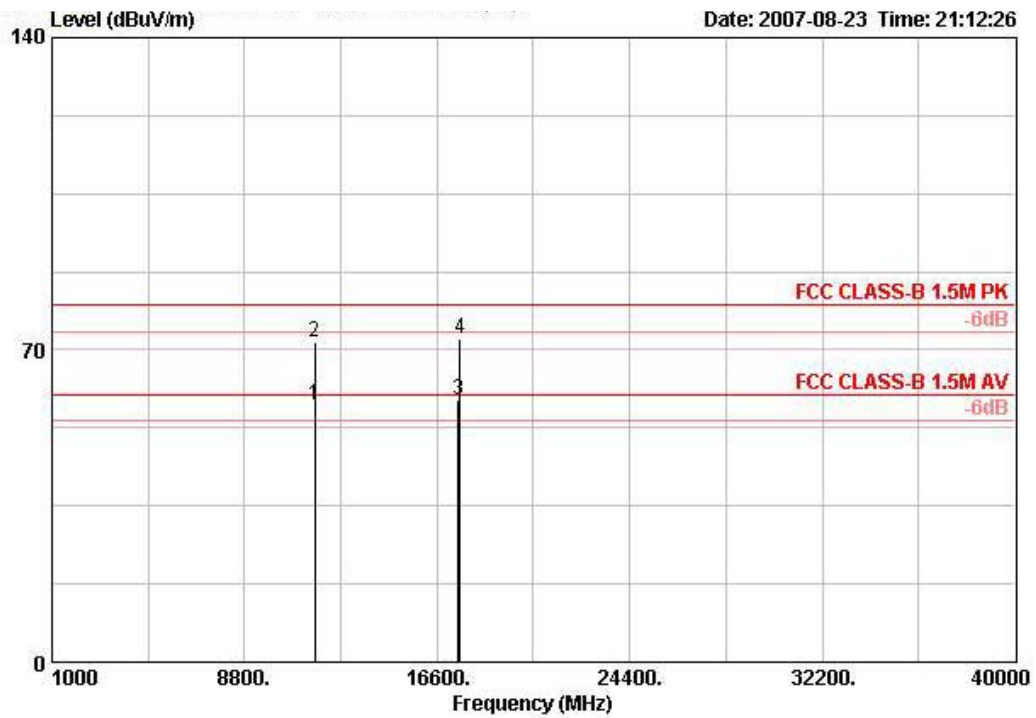
Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11a CH 165

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11653.000	51.53	-8.47	60.00	32.07	39.44	13.16	33.13	AVERAGE	103	66
2 @	11653.200	65.38	-14.62	80.00	45.91	39.44	13.16	33.13	PEAK	103	66
3 @	17460.400	71.30	-8.70	80.00	46.03	42.15	15.52	32.40	PEAK	103	306
4 @	17470.000	57.79	-2.21	60.00	32.44	42.23	15.52	32.40	AVERAGE	103	306

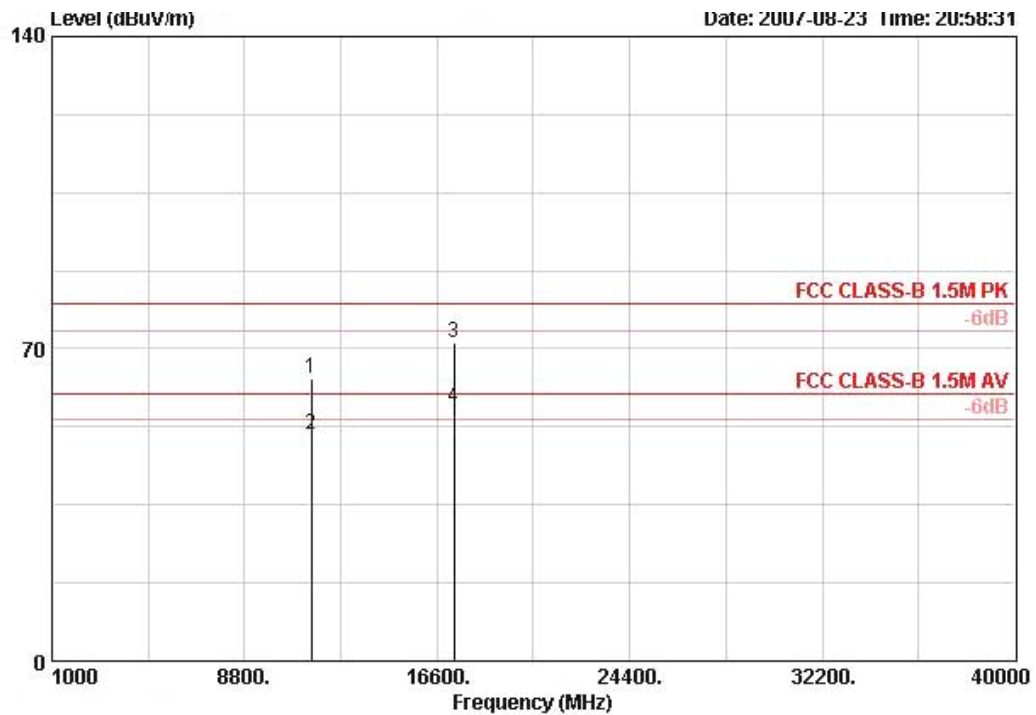
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11644.400	57.46	-2.54	60.00	37.99	39.44	13.15	33.13	AVERAGE	108	241
2 @	11649.000	71.61	-8.39	80.00	52.14	39.44	13.16	33.13	PEAK	108	241
3 @	17469.800	58.78	-1.22	60.00	33.42	42.23	15.52	32.40	AVERAGE	103	30
4 @	17523.600	72.56	-7.44	80.00	46.94	42.48	15.54	32.40	PEAK	103	30

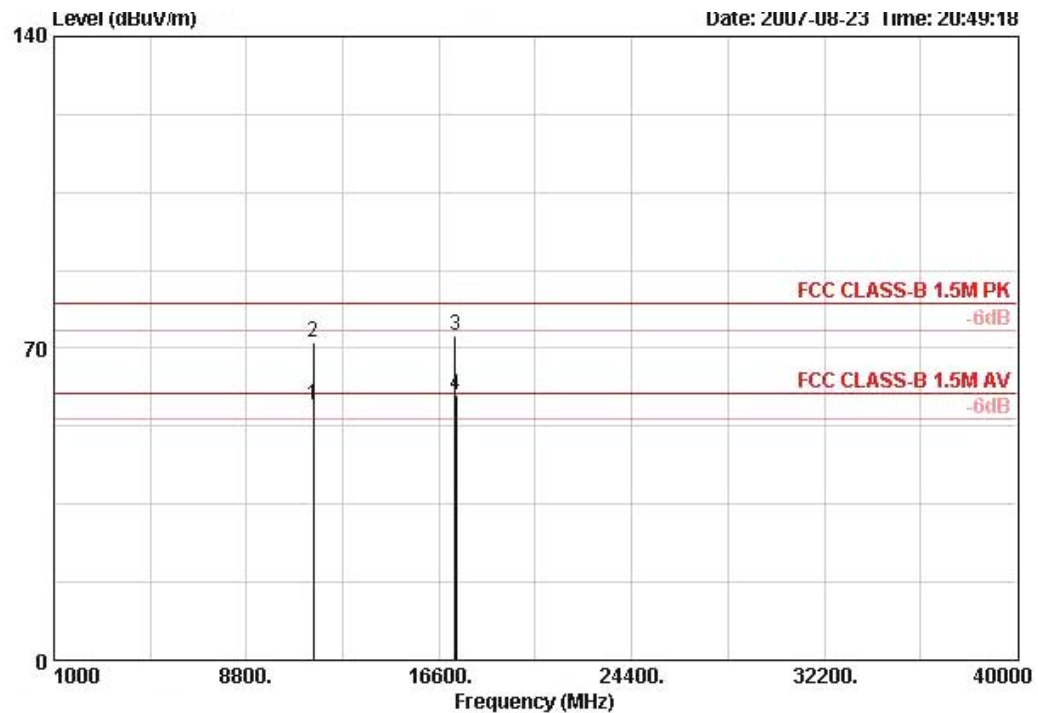
Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11a Turbo CH 152

Horizontal



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11502.200	63.33	-16.67	80.00	43.85	39.50	13.08	33.10	PEAK	120	149
2 @	11518.200	50.66	-9.34	60.00	31.19	39.49	13.08	33.10	AVERAGE	120	149
3 @	17281.200	71.26	-8.74	80.00	47.04	41.32	15.31	32.40	PEAK	103	307
4 @	17281.400	56.74	-3.26	60.00	32.51	41.32	15.31	32.40	AVERAGE	103	307

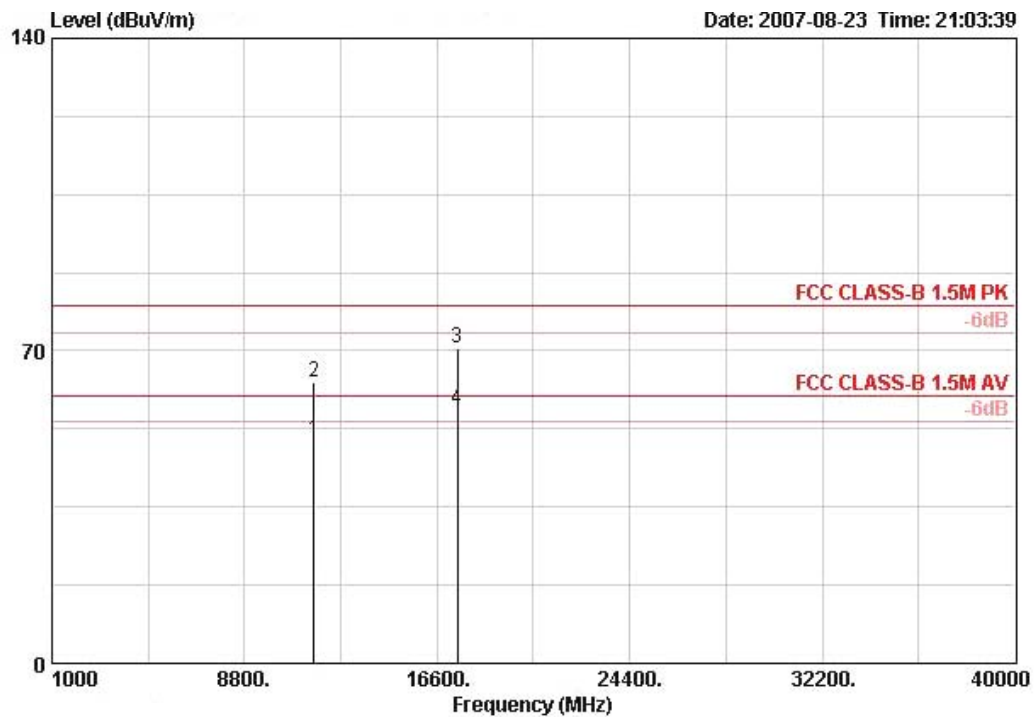
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11517.500	57.32	-2.68	60.00	37.85	39.49	13.08	33.10	AVERAGE	104	243
2 @	11522.100	71.34	-8.66	80.00	51.86	39.49	13.09	33.11	PEAK	104	243
3 @	17262.400	72.80	-7.20	80.00	48.66	41.23	15.31	32.40	PEAK	102	56
4 @	17275.400	59.48	-0.52	60.00	35.34	41.23	15.31	32.40	AVERAGE	102	56

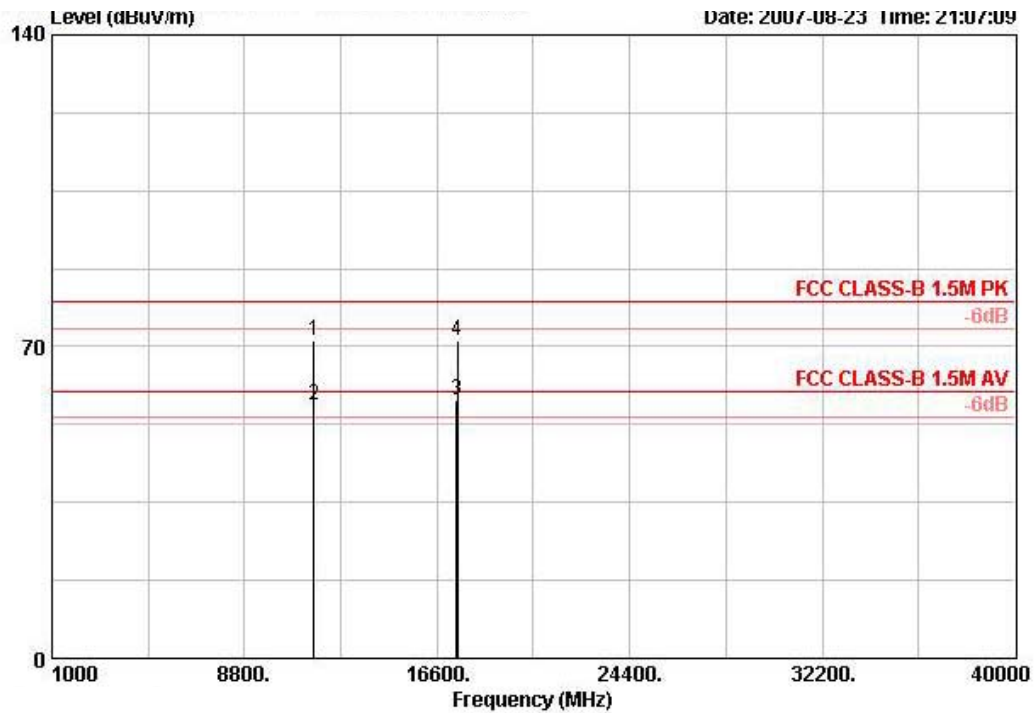
Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11a Turbo CH 160

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Pos	Pos
1 @	11600.800	50.16	-9.84	60.00	30.68	39.46	13.13	33.12	AVERAGE	133 91
2 @	11611.600	62.95	-17.05	80.00	43.48	39.46	13.13	33.12	PEAK	133 91
3 @	17410.200	70.40	-9.60	80.00	45.43	41.90	15.47	32.40	PEAK	110 334
4 @	17414.400	56.89	-3.11	60.00	31.84	41.98	15.47	32.40	AVERAGE	110 334

Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11597.600	71.39	-8.61	80.00	51.92	39.47	13.13	33.12	PEAK	109	242
2 @	11602.800	56.85	-3.15	60.00	37.37	39.46	13.13	33.12	AVERAGE	109	242
3 @	17388.200	57.86	-2.14	60.00	33.01	41.82	15.44	32.40	AVERAGE	8995	57
4 @	17424.800	71.30	-8.70	80.00	46.25	41.98	15.47	32.40	PEAK	100	57

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Band Edge Emissions Measurement

4.6.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100 KHz /100 KHz for Peak

4.6.3. Test Procedures

- The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.
- In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

4.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

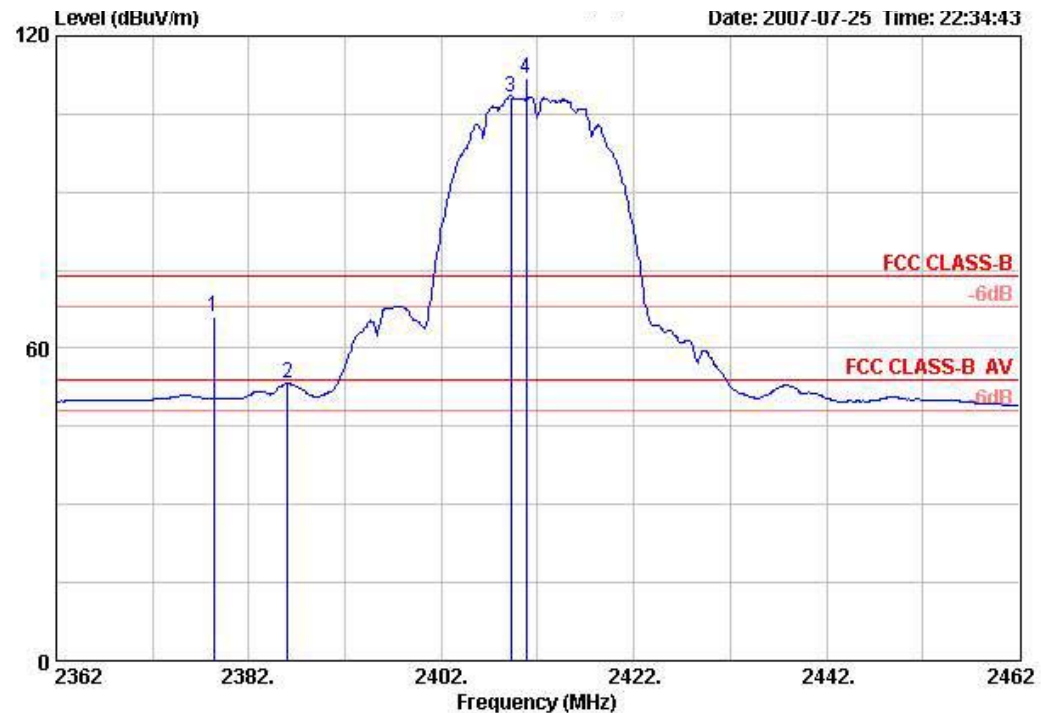
4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11b CH 1, 11

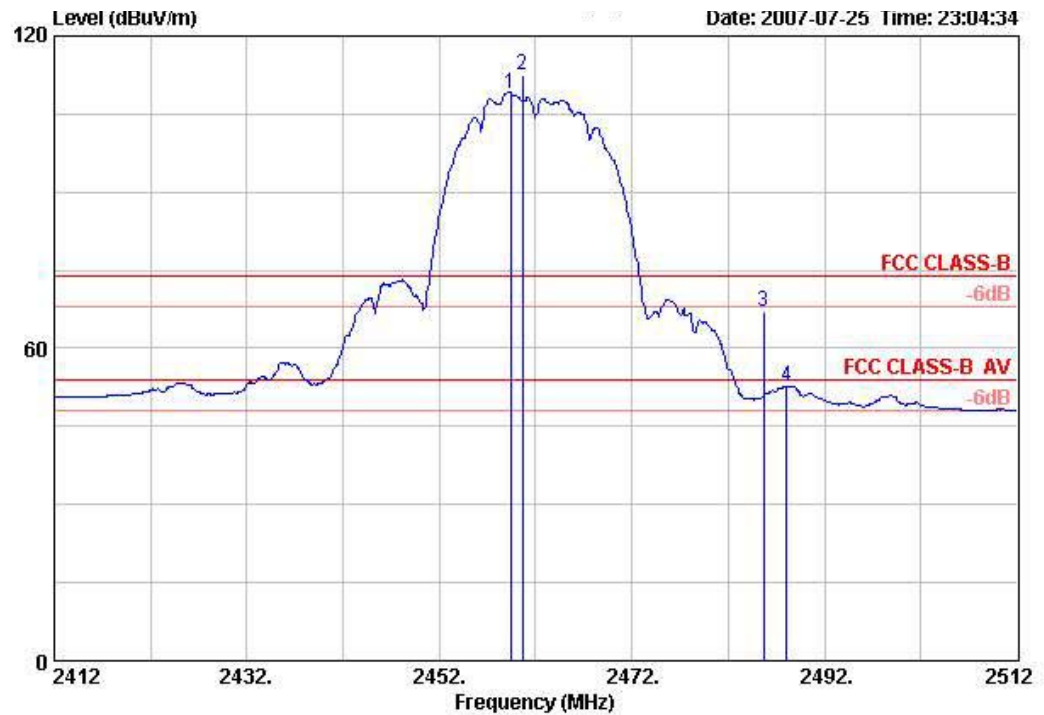
Channel 1



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	
1	2378.400	65.94	-8.06	74.00	31.64	28.13	6.17	0.00	PEAK	100	VERTICAL
2 !	2386.000	53.25	-0.75	54.00	18.92	28.17	6.17	0.00	AVERAGE	100	VERTICAL
3 @	2409.200	108.36			73.95	28.21	6.20	0.00	AVERAGE	100	VERTICAL
4	2410.800	111.95			77.54	28.21	6.20	0.00	PEAK	100	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 11

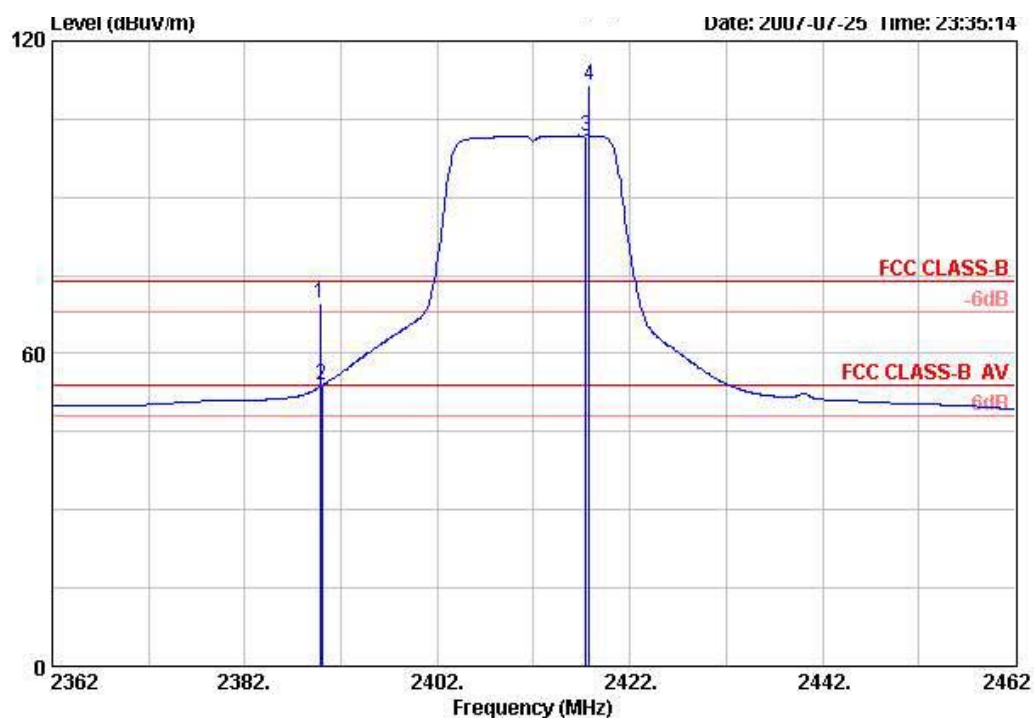


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	
1 @	2459.400	109.05			74.45	28.32	6.27	0.00	AVERAGE	100	HORIZONTAL
2	2460.600	112.33			77.74	28.32	6.27	0.00	PEAK	100	HORIZONTAL
3	2485.700	67.19	-6.81	74.00	32.52	28.36	6.31	0.00	PEAK	100	HORIZONTAL
4 !	2488.100	52.74	-1.26	54.00	18.03	28.40	6.31	0.00	AVERAGE	100	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11g CH 1, 11

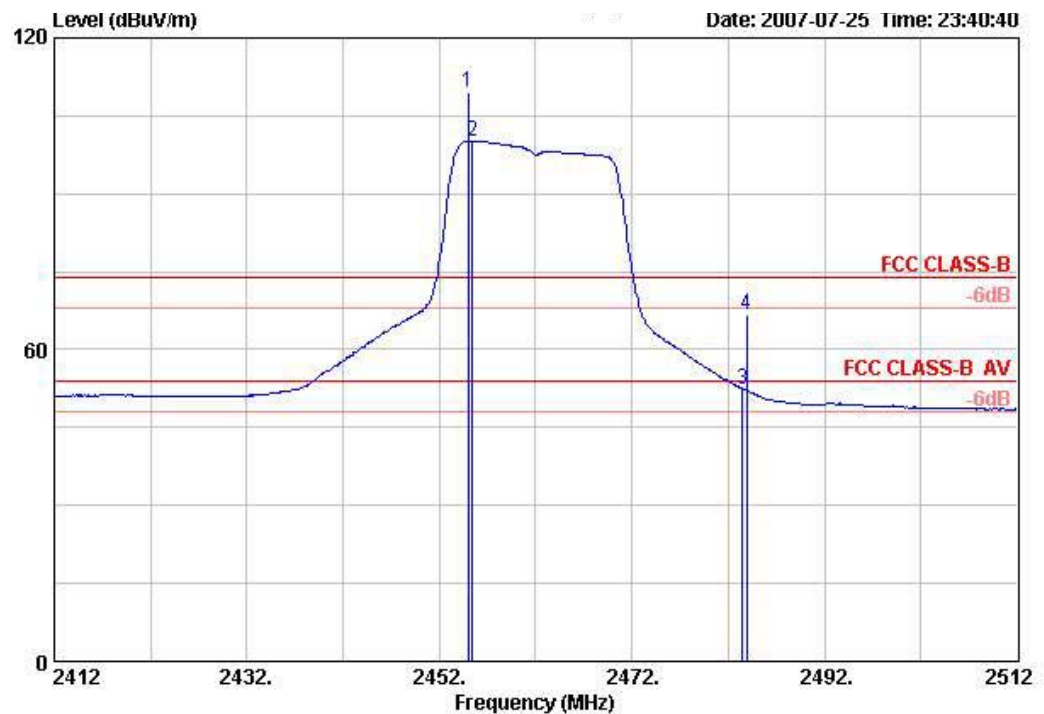
Channel 1



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	
1 !	2389.800	69.66	-4.34	74.00	35.29	28.17	6.20	0.00	PEAK	100	VERTICAL
2 !	2390.000	53.82	-0.18	54.00	19.45	28.17	6.20	0.00	AVERAGE	100	VERTICAL
3 @	2417.400	101.85			67.40	28.21	6.24	0.00	AVERAGE	100	VERTICAL
4	2417.800	111.56			77.11	28.21	6.24	0.00	PEAK	100	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 11

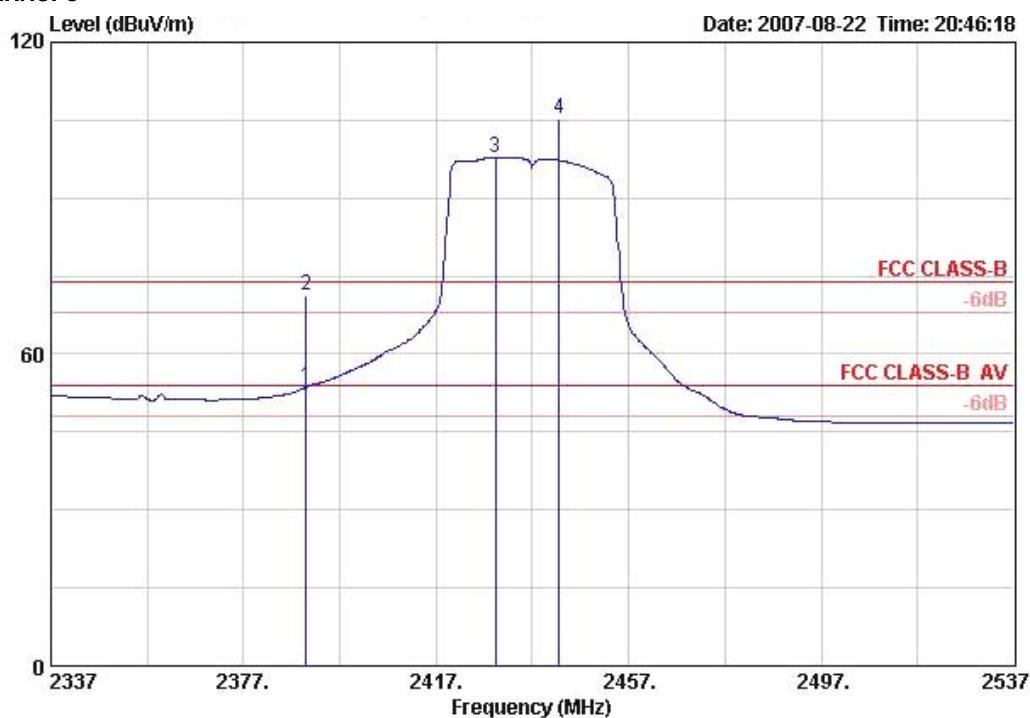


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	
1	2455.000	109.50			74.91	28.32	6.27	0.00	PEAK	100	VERTICAL
2	2455.400	100.09			65.50	28.32	6.27	0.00	AVERAGE	100	VERTICAL
3	2483.500	52.37	-1.63	54.00	17.70	28.36	6.31	0.00	AVERAGE	100	VERTICAL
4	2483.900	66.56	-7.44	74.00	31.89	28.36	6.31	0.00	PEAK	100	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	24.3°C	Humidity	56%
Test Engineer	Barry Chen	Configurations	802.11g Turbo CH 6

Turbo Channel 6



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2390.000	53.70	-0.30	54.00	20.66	28.05	4.98	0.00	AVERAGE	100	264
2 !	2390.000	71.20	-2.80	74.00	38.17	28.05	4.98	0.00	PEAK	100	264
3 @	2429.400	97.80			64.64	28.13	5.02	0.00	AVERAGE	100	264
4 @	2442.600	105.14			71.89	28.18	5.07	0.00	PEAK	100	264

Item 3, 4 are the fundamental frequency at 2437 MHz.

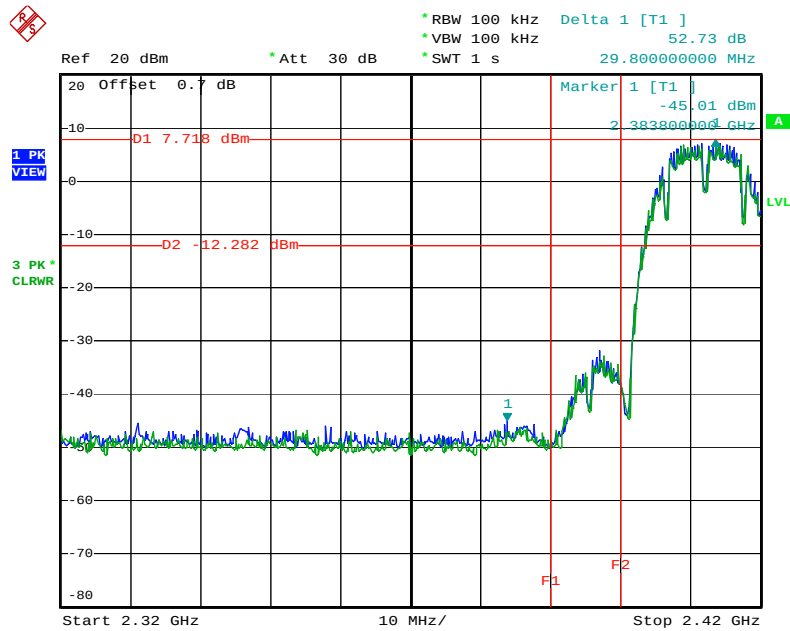
Note:

Emission level (dBUV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

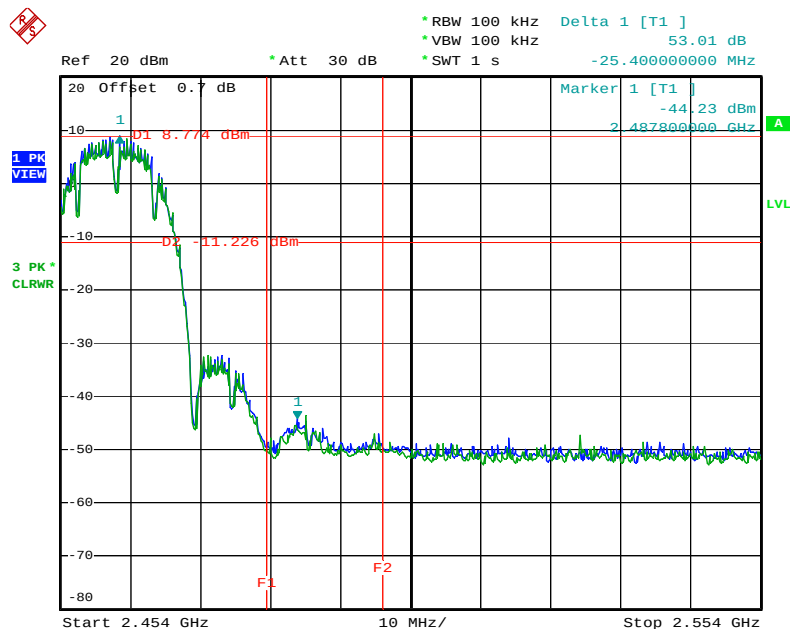
For Emission not in Restricted Band

Low Band Edge Plot on Configuration IEEE 802.11b / 2412 MHz



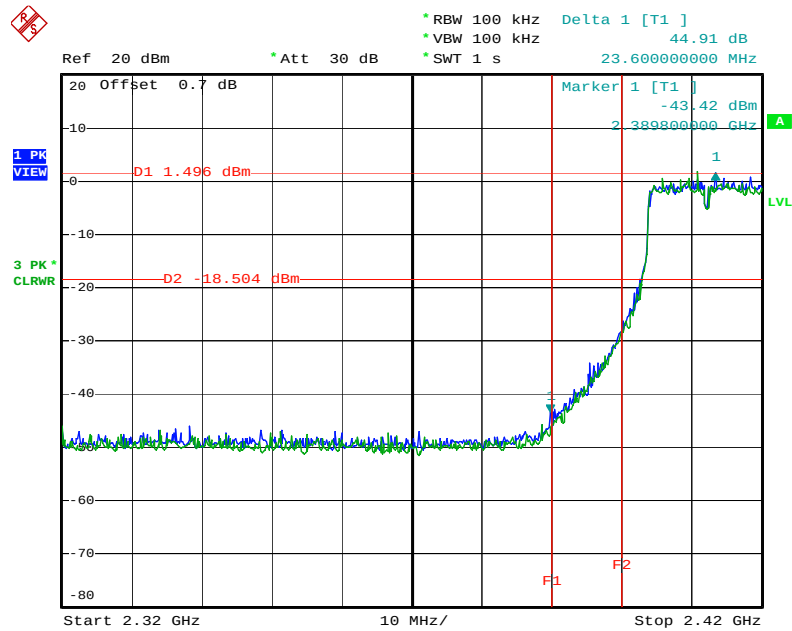
Date: 27.AUG.2007 11:06:50

High Band Edge Plot on Configuration IEEE 802.11b / 2462 MHz



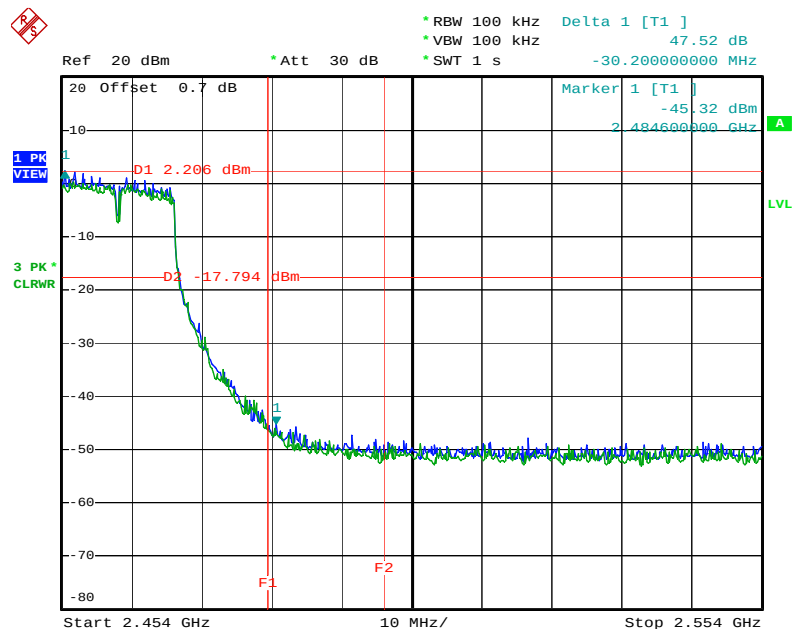
Date: 27.AUG.2007 11:05:18

Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz



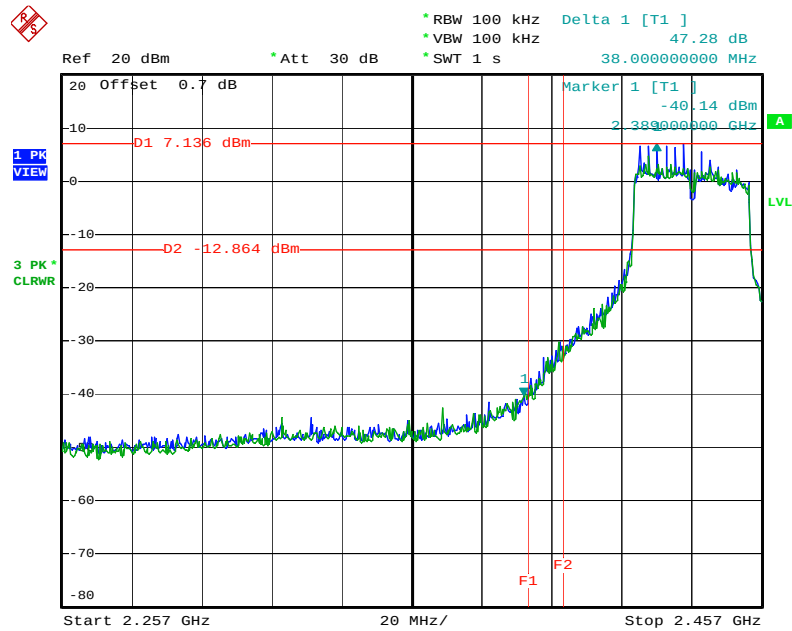
Date: 27.AUG.2007 10:43:06

High Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz



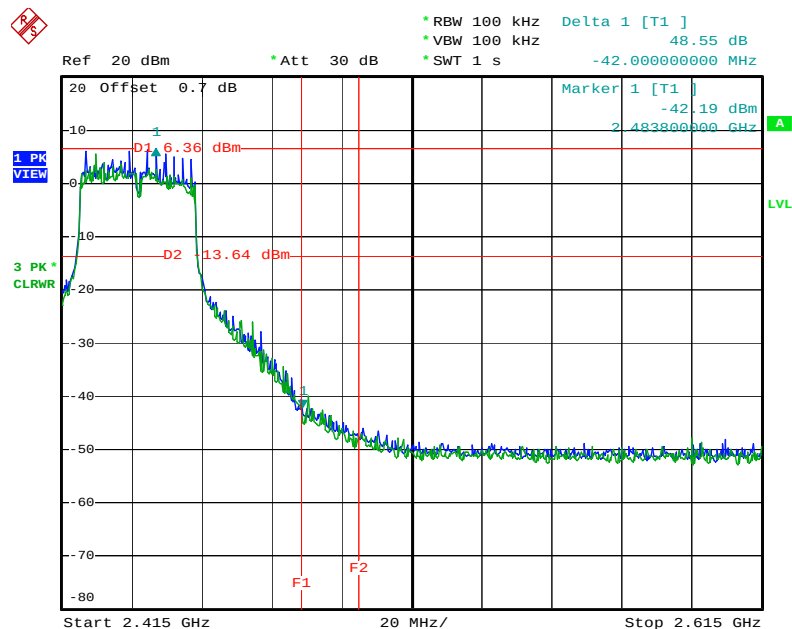
Date: 27.AUG.2007 10:46:57

Low Band Edge Plot on Configuration IEEE 802.11g Turbo / 2437 MHz



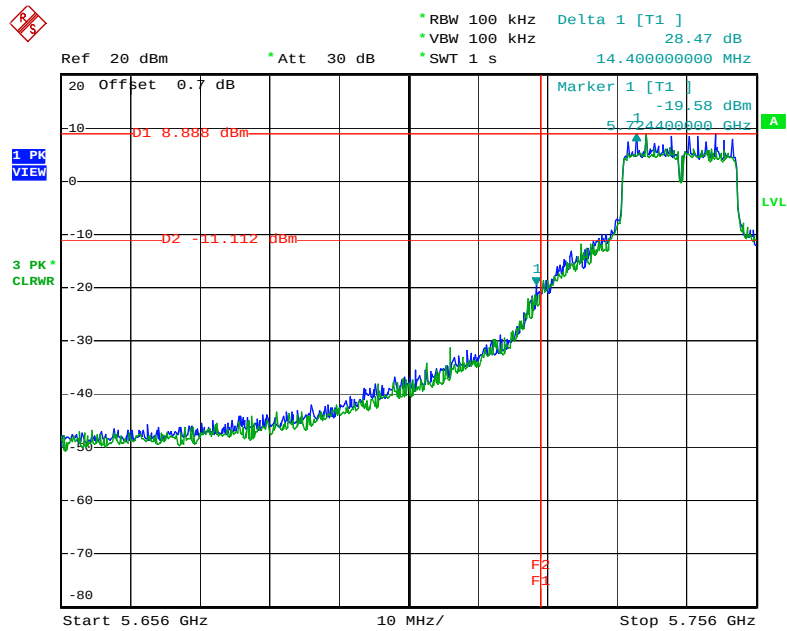
Date: 27.AUG.2007 11:59:03

High Band Edge Plot on Configuration IEEE 802.11g Turbo/ 2437 MHz



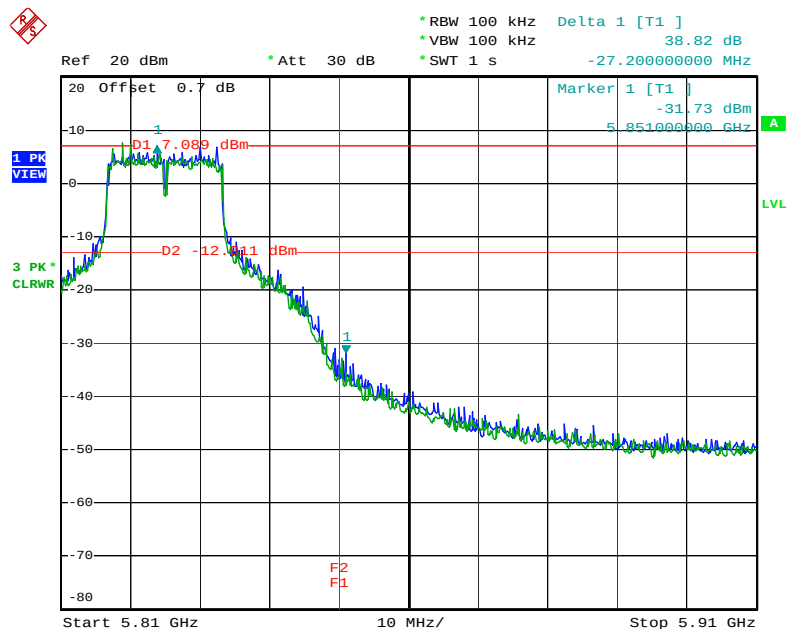
Date: 27.AUG.2007 11:59:12

Low Band Edge Plot on Configuration IEEE 802.11a / 5745 MHz



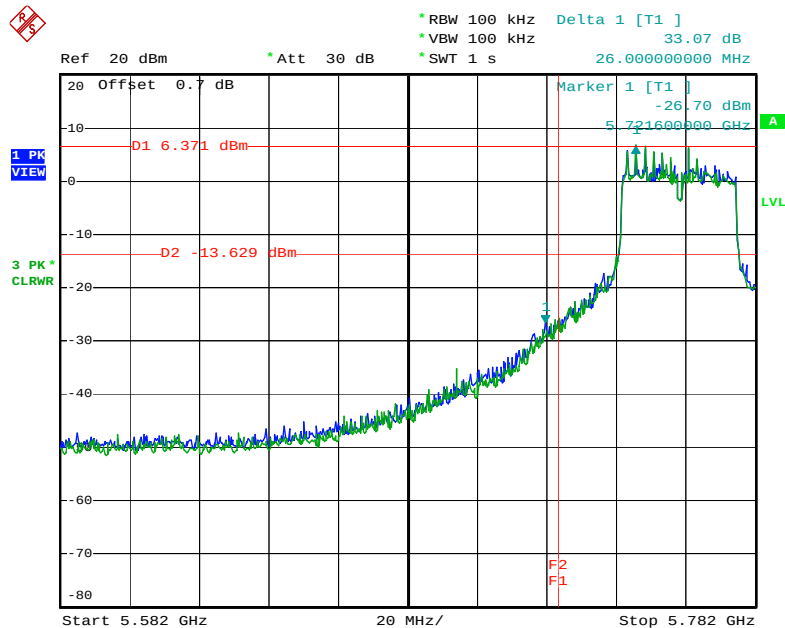
Date: 27.AUG.2007 11:39:34

High Band Edge Plot on Configuration IEEE 802.11a / 5825 MHz



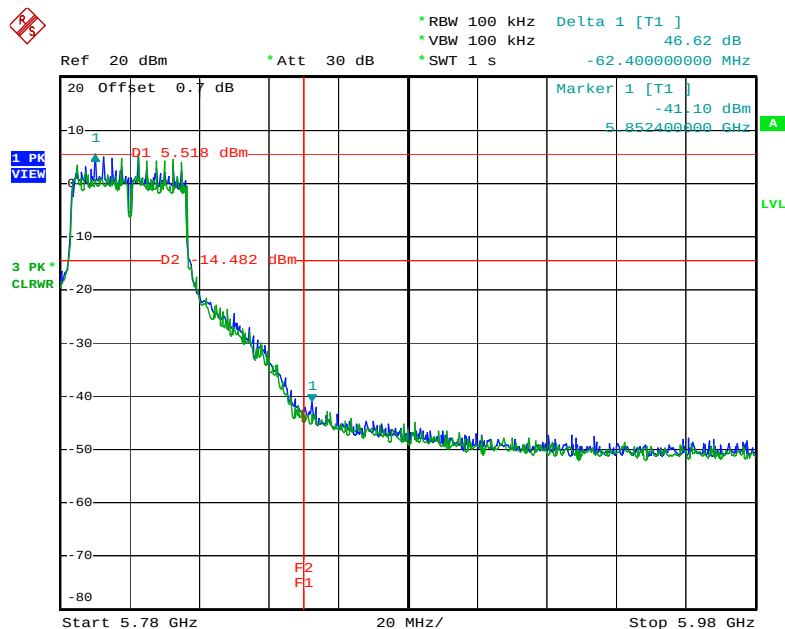
Date: 27.AUG.2007 11:42:21

Low Band Edge Plot on Configuration IEEE 802.11a Turbo / 5760 MHz



Date: 27.AUG.2007 11:43:49

High Band Edge Plot on Configuration IEEE 802.11a Turbo / 5800 MHz



Date: 27.AUG.2007 11:45:06

4.7. Antenna Requirements

4.7.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.7.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100359	9kHz – 2.75GHz	Mar. 01, 2007	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz – 30MHz	May 09, 2007	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	Conduction (CO04-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 14, 2007	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	CPA9231A	1886	9 kHz - 2 GHz	Jan. 22, 2007	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Jun. 07, 2007	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	923364	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100004/040	9 kHz - 40 GHz	Sep. 21, 2006	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2006*	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 21, 2007	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	May 04, 2007	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	NCR	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec. 02, 2006	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec. 02, 2006	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 – 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Dec. 17, 2006	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 27, 2007	Conducted (TH01-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 04, 2007*	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2007	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 02, 2006	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2006	Conducted (TH01-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2006	Conducted (TH01-HY)
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Nov. 14, 2006	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

Note: * Calibration Interval of instruments listed above is two year.

Note: NCR means Non-Calibration required.

6. TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 nd Rd., Taipei 114, Taiwan, R.O.C. TEL : 886-2-2794-8886 FAX : 886-2-2794-9777
JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

7. TAF CERTIFICATE OF ACCREDITATION



Certificate No. : LI190-070110

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	: ISO/IEC 17025:2005
Accreditation Number	: 1190
Originally Accredited	: December 15, 2003
Effective Period	: January 10, 2007 to January 09, 2010
Accredited Scope	: Testing Field, see described in the Appendix
Specific Accreditation Program	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 10, 2007

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The Appendix forms an integral part of this Certificate, which shall be invalid when used without the Appendix.