

FCC TEST REPORT (15.247)

REPORT NO.: RF931215L08

MODEL NO.: AM-5012-11AG

RECEIVED: Dec. 08, 2004

TESTED: Dec. 08, 2004 ~ Jan. 28, 2005

ISSUED: Jan. 31, 2005

APPLICANT: AirMagnet, Inc

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0528
ILAC MRA



No. 2177-01

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1. CERTIFICATION

PRODUCT: 802.11a/b/g wireless sensor
BRAND NAME: Airmagnet
MODEL NO.: AM-5012-11AG
TEST SAMPLE: ENGINEERING SAMPLE
TESTED: Dec. 08, 2004 ~ Jan. 28, 2005
APPLICANT: AirMagnet, Inc.
STANDARDS: FCC Part 15, Subpart C (Section 15.247),
ANSI C63.4-2003

The above equipment has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Candice Chen , **DATE:** Jan. 31, 2005
(Candice Chen)

TECHNICAL
ACCEPTANCE : Gary Chang , **DATE:** Jan. 31, 2005
Responsible for RF (Gary Chang)

APPROVED BY : Cody Chang , **DATE:** Jan. 31, 2005
(Cody Chang, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.28dB at 0.498MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -0.08dB at 6336.00MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.55 dB
	200MHz ~1000MHz	3.58 dB
	1GHz ~ 18GHz	1.10 dB
	18GHz ~ 40GHz	0.91 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	802.11a/b/g wireless sensor
MODEL NO.	AM-5012-11AG
POWER SUPPLY	12Vdc from AC adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.15 ~ 5.35GHz and 5.725 ~ 5.825GHz
NUMBER OF CHANNEL	802.11b & 802.11g: 11 802.11a: 13
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz
OUTPUT POWER	7.980mW for 802.11b 10.069mW for 802.11g 17.140mW for 5.150 ~ 5.350GHz 15.922mW for 5.725 ~ 5.825GHz
DATA CABLE	NA
ANTENNA TYPE	Please refer to Note 2 below
I/O PORTS	RJ45, RS232
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT was tested with the following adapter:

BRAND :	FAIRWAY
MODEL :	VE20-120
INPUT :	100-240Vac, 50-60Hz
OUTPUT :	12Vdc, 1.66A
POWER LINE :	AC 1.8m shielded cable without core DC 1.6m shielded cable with one core



2. The EUT have two combinations of antenna type. Please refer to following table.

Combination	Antenna type	P/N	Manufacturer	Description	Gain (dBi)
1	Dipole	T614AT-2.4/5.x-S	Joymax	Single band antenna for 2.4GHz band	4.5
	Dipole	WTS2450-RPSMA	Centurion Wireless	Single band antenna for 5GHz band	6
2	Dipole	IG2450-RT36	Centurion Wireless	Single band antenna for 2.4GHz band	6
	Patch	IO5250-RT36	Centurion	Single band antenna for 5GHz band	5

3. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.

4. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

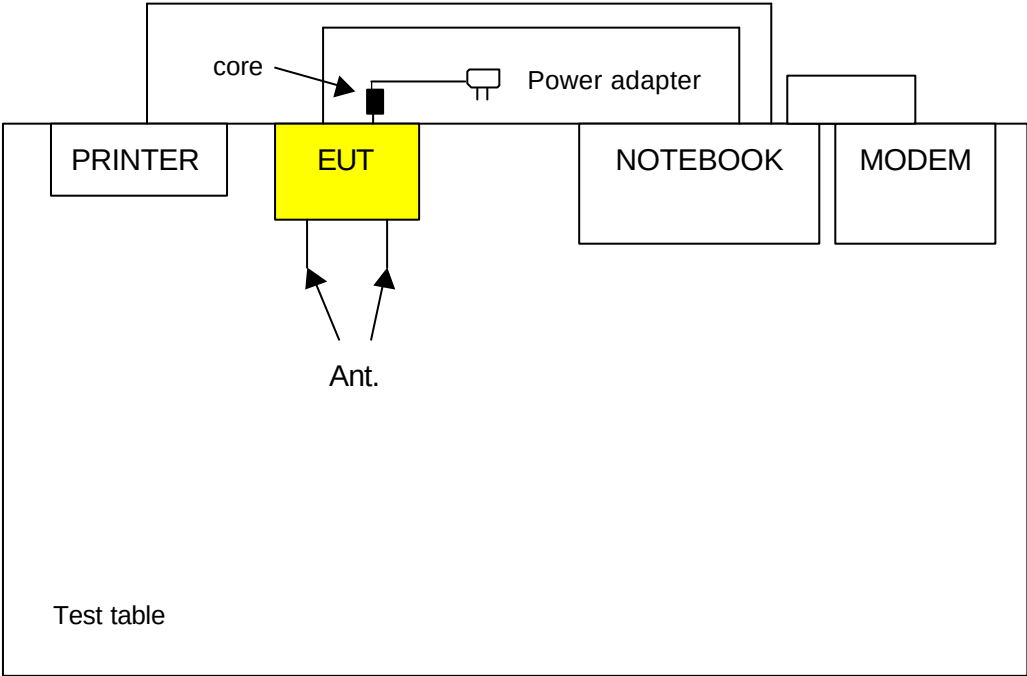
For 802.11b/g: Eleven channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

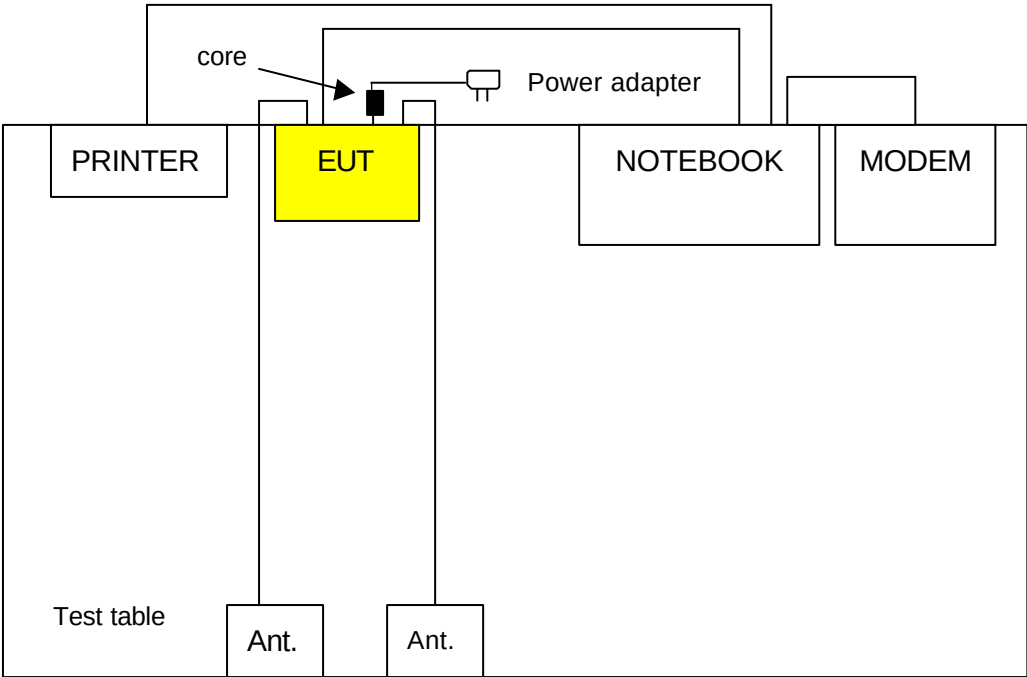


3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Test Mode 1 (ANTENNA COMBINATION 1)



Test Mode 2 (ANTENNA COMBINATION 2)





3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
1	Note 1	x	x	x	antenna combination 1 (refer to Note 2 of section 3.1)
2	Note 1	x	x	x	antenna combination 2 (refer to Note 2 of section 3.1)

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

Note 1: Power Line Conducted Emission only recorded antenna combination 1, 2 for worst case in the report.

Power Line Conducted Emission Test:

☒? Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

Radiated Emission Test (Below 1 GHz):

☒? Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

Radiated Emission Test (Above 1 GHz):

☒? Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	11
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

**Bandedge Measurement:**

- ☒? Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 11	DSSS	CCK	11
802.11g	1 to 11	1, 11	OFDM	BPSK	6

Antenna Port Conducted Measurement:

- ☒? Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	11
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 802.11a/b/g wireless sensor. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247)

ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	20838027664	E2K24CLNS
2	MODEM	ACEEX	1414V/3	0401008248	IFAXDM1414
3	PRINTER	EPSON	LQ-300+	DCGY047265	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2 shielded cable without core
3	1.2 shielded cable without core

NOTE: All power cords of the above support units are non shielded (1.8m).

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 16, 2005
RF signal cable Woken	5D-FB	Cable-HYC01-01	Mar. 02, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Mar. 03, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Mar. 02, 2005
Software ADT	ADT_Conc_V3	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.



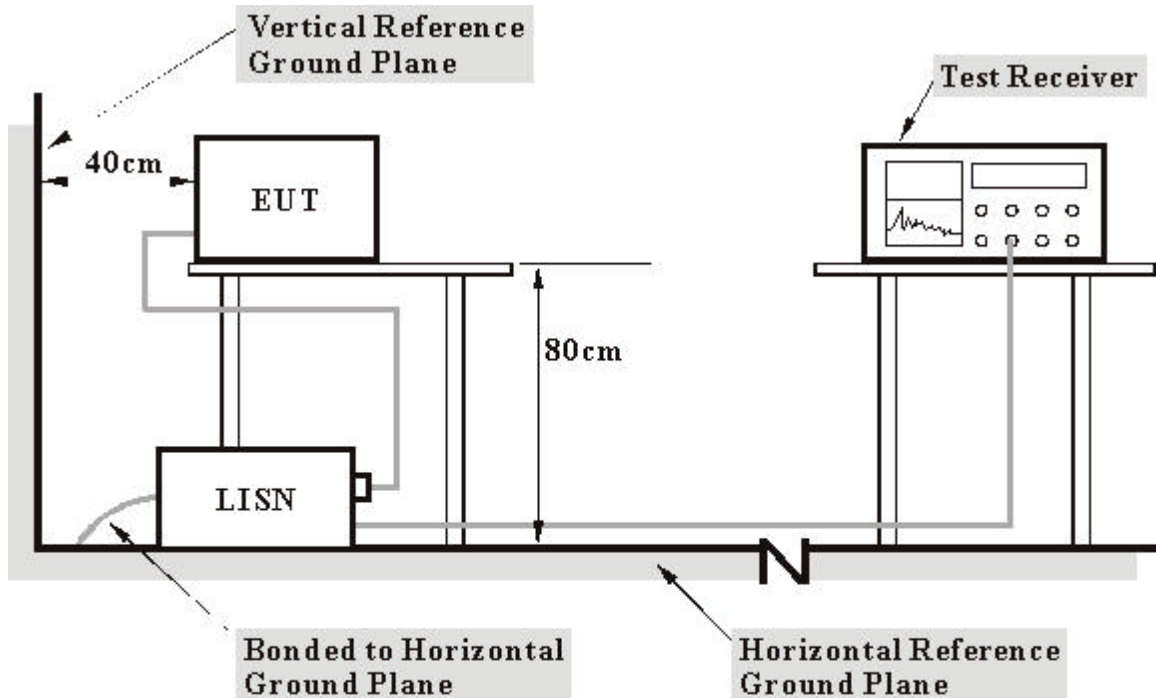
4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

- a. Connected the EUT to a notebook system placed on a testing table.
- b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- c. The notebook system sent "H" messages to its screen.
- d. The notebook system sent "H" messages to modem.
- e. The notebook system sent "H" messages to printer, and the printer printed them on paper.
- f. Steps c ~ e were repeated.

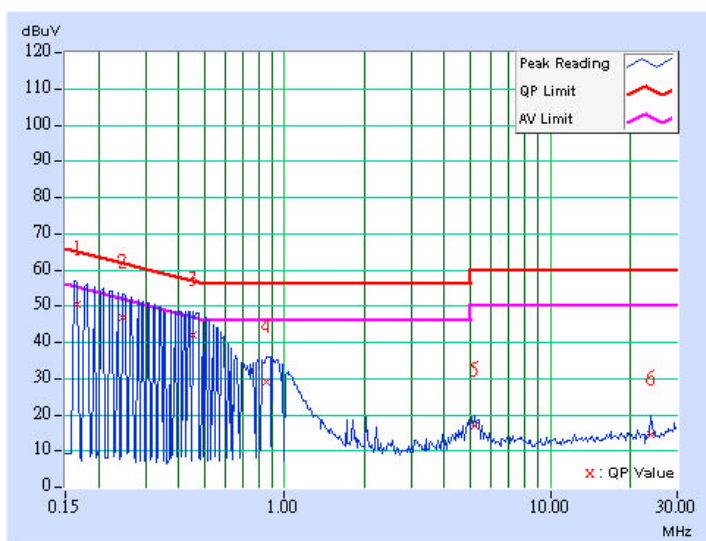
4.1.7 TEST RESULTS

Conducted Worst-Case Data

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.11	49.27	-	49.38	-	65.18	55.18	-15.80	-
2	0.248	0.12	45.63	-	45.75	-	61.84	51.84	-16.08	-
3	0.455	0.13	40.95	-	41.08	-	56.79	46.79	-15.71	-
4	0.857	0.14	28.08	-	28.22	-	56.00	46.00	-27.78	-
5	5.167	0.24	15.73	-	15.97	-	60.00	50.00	-44.03	-
6	24.016	1.13	13.31	-	14.44	-	60.00	50.00	-45.56	-

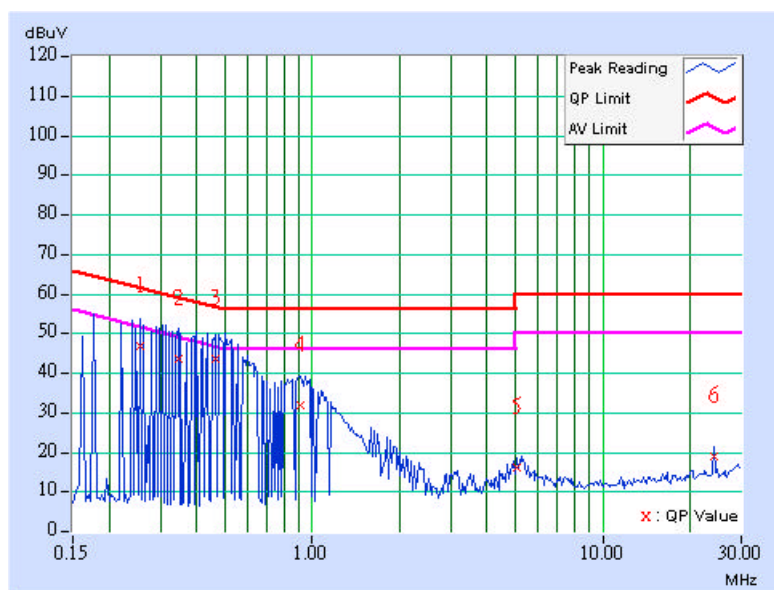
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.11	46.29	-	46.40	-	61.58	51.58	-15.18	-
2	0.345	0.11	43.13	-	43.24	-	59.07	49.07	-15.83	-
3	0.466	0.12	43.08	-	43.20	-	56.58	46.58	-13.38	-
4	0.908	0.14	31.31	-	31.45	-	56.00	46.00	-24.55	-
5	5.043	0.22	15.54	-	15.76	-	60.00	50.00	-44.24	-
6	24.020	0.68	18.12	-	18.80	-	60.00	50.00	-41.20	-

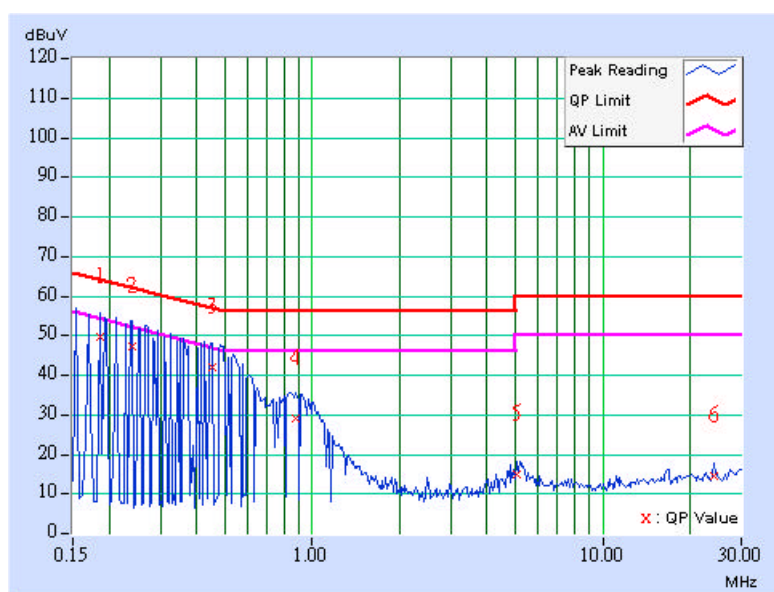
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.12	48.40	-	48.52	-	64.25	54.25	-15.74	-
2	0.240	0.12	45.95	-	46.07	-	62.10	52.10	-16.03	-
3	0.455	0.13	40.87	-	41.00	-	56.79	46.79	-15.79	-
4	0.880	0.14	27.84	-	27.98	-	56.00	46.00	-28.02	-
5	5.039	0.23	13.88	-	14.11	-	60.00	50.00	-45.89	-
6	24.020	1.13	13.55	-	14.68	-	60.00	50.00	-45.32	-

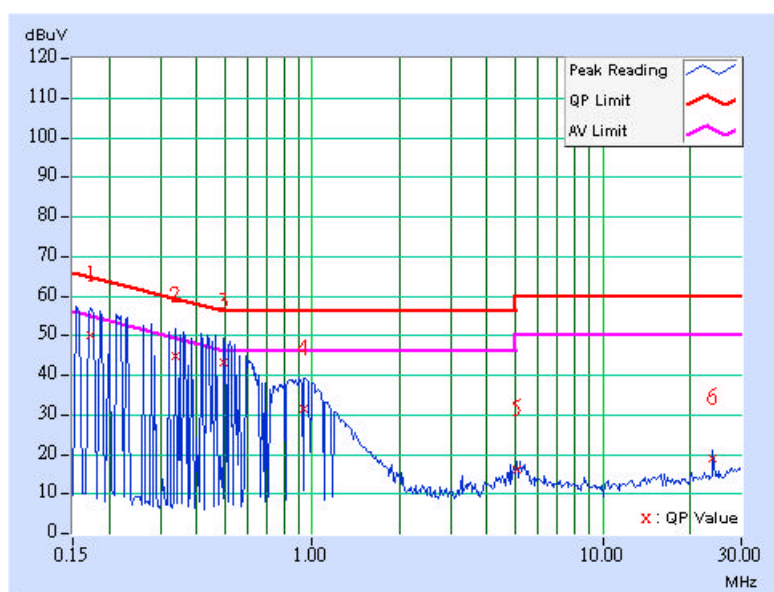
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.10	49.38	-	49.48	-	64.79	54.79	-15.31	-
2	0.338	0.11	44.00	-	44.11	-	59.26	49.26	-15.15	-
3	0.498	0.12	42.64	-	42.76	-	56.04	46.04	-13.28	-
4	0.939	0.14	30.84	-	30.98	-	56.00	46.00	-25.02	-
5	5.043	0.22	15.66	-	15.88	-	60.00	50.00	-44.12	-
6	24.018	0.68	18.34	-	19.02	-	60.00	50.00	-40.98	-

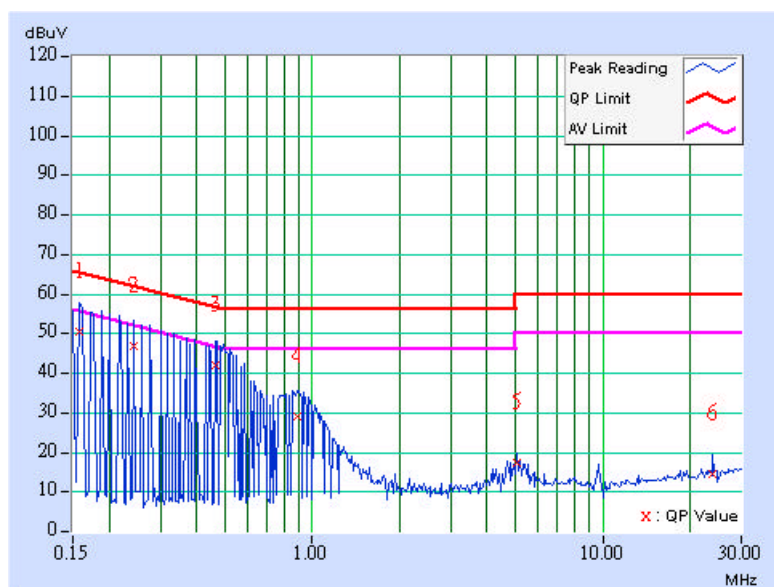
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.11	49.47	-	49.58	-	65.58	55.58	-16.00	-
2	0.244	0.12	45.85	-	45.97	-	61.97	51.97	-16.00	-
3	0.463	0.13	40.91	-	41.04	-	56.65	46.65	-15.61	-
4	0.892	0.14	27.80	-	27.94	-	56.00	46.00	-28.06	-
5	5.043	0.23	16.22	-	16.45	-	60.00	50.00	-43.55	-
6	24.016	1.13	13.39	-	14.52	-	60.00	50.00	-45.48	-

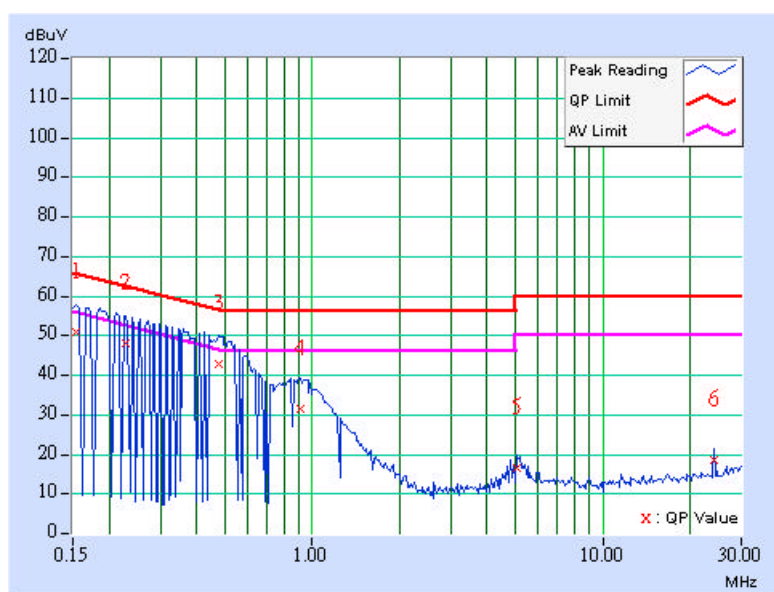
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	TESTED BY	Kent Chen

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	50.03	-	50.13	-	65.79	55.79	-15.66	-
2	0.228	0.11	47.23	-	47.34	-	62.52	52.52	-15.18	-
3	0.478	0.12	42.33	-	42.45	-	56.37	46.37	-13.92	-
4	0.908	0.14	31.01	-	31.15	-	56.00	46.00	-24.85	-
5	5.043	0.22	15.78	-	16.00	-	60.00	50.00	-44.00	-
6	24.020	0.68	18.04	-	18.72	-	60.00	50.00	-41.28	-

- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 08, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jun. 03, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Feb. 03, 2005
HORN Antenna SCHWARZBECK	9120D	9120D-408	Jan. 17, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170243	Feb. 23, 2005
Preamplifier Agilent	8447D	2944A10633	Nov. 09, 2005
Preamplifier Agilent	8449B	3008A01964	Nov. 06, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218183/4	Mar. 05, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218195/4	Mar. 05, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 2.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The VCCI Site Registration No. is R-237.
5. The IC Site Registration No. is IC4924-3.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

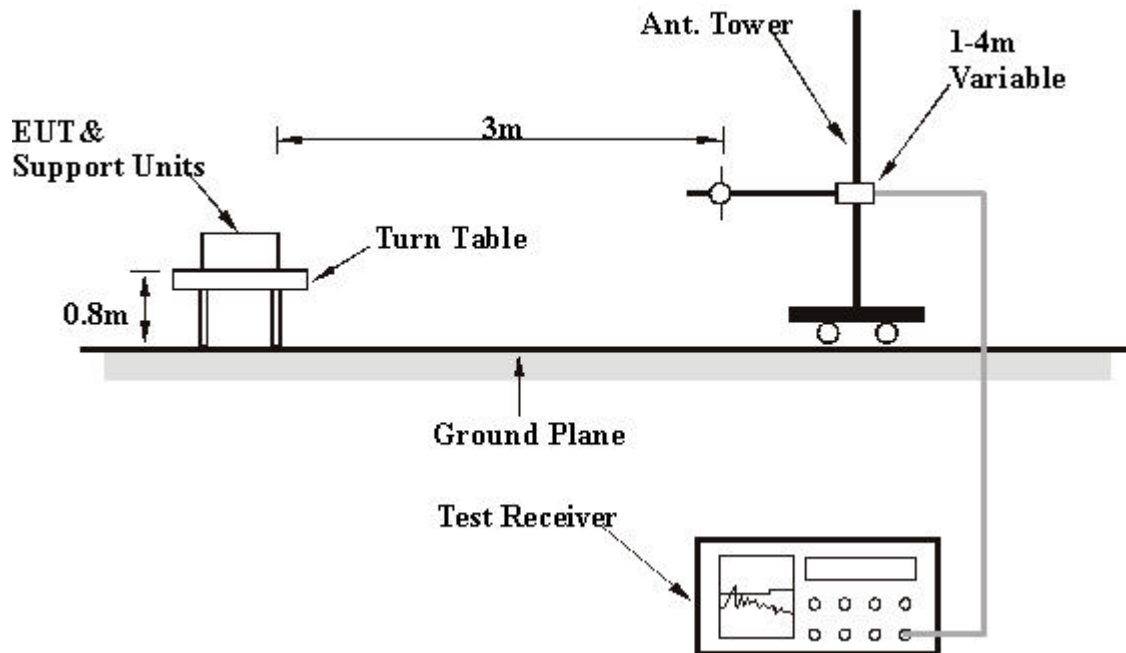
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS

Below 1GHz Worst-Case Data (Antenna combination 1)

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.21	30.10 QP	40.00	-9.90	1.75 H	46	16.11	13.99
2	107.76	41.18 QP	43.50	-2.32	1.50 H	280	29.41	11.77
3	144.69	32.84 QP	43.50	-10.66	1.25 H	67	18.31	14.53
4	224.39	37.54 QP	46.00	-8.46	1.25 H	73	25.43	12.11
5	249.66	40.30 QP	46.00	-5.70	1.00 H	82	27.08	13.22
6	395.45	34.79 QP	46.00	-11.21	1.00 H	64	18.14	16.65
7	420.72	32.11 QP	46.00	-13.89	1.00 H	280	14.81	17.30
8	494.59	37.63 QP	46.00	-8.37	1.75 H	40	18.97	18.66
9	593.73	39.62 QP	46.00	-6.38	1.25 H	19	18.78	20.84
10	669.54	35.98 QP	46.00	-10.02	1.00 H	25	14.06	21.92
11	692.87	43.36 QP	46.00	-2.64	1.00 H	268	21.14	22.21
12	758.96	35.96 QP	46.00	-10.04	1.00 H	298	12.38	23.58
13	792.00	40.38 QP	46.00	-5.62	1.00 H	301	16.60	23.77
14	825.05	32.75 QP	46.00	-13.25	1.00 H	295	8.75	24.01
15	891.14	33.72 QP	46.00	-12.28	1.50 H	10	8.77	24.95

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	60.26	38.73 QP	40.00	-1.27	1.00 V	175	25.05	13.68
2	107.76	41.36 QP	43.50	-2.14	1.75 V	28	29.58	11.77
3	144.69	36.15 QP	43.50	-7.35	1.00 V	211	21.62	14.53
4	224.39	29.13 QP	46.00	-16.87	1.25 V	340	17.02	12.11
5	249.66	32.68 QP	46.00	-13.32	1.25 V	235	19.47	13.22
6	288.54	32.92 QP	46.00	-13.08	1.50 V	358	18.60	14.32
7	319.64	34.49 QP	46.00	-11.51	1.50 V	10	19.54	14.95
8	350.74	44.77 QP	46.00	-1.23	1.25 V	46	29.11	15.67
9	395.45	35.16 QP	46.00	-10.84	1.00 V	340	18.51	16.65
10	512.08	33.81 QP	46.00	-12.19	1.00 V	175	14.85	18.96
11	593.73	38.34 QP	46.00	-7.66	1.00 V	205	17.49	20.84
12	640.38	35.24 QP	46.00	-10.76	1.25 V	175	13.69	21.55
13	692.87	40.88 QP	46.00	-5.12	1.00 V	208	18.67	22.21
14	758.96	36.04 QP	46.00	-9.96	1.25 V	268	12.45	23.58
15	792.00	39.17 QP	46.00	-6.83	1.75 V	139	15.40	23.77
16	891.14	38.83 QP	46.00	-7.17	1.00 V	313	13.88	24.95

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value

**Below 1GHz Worst-Case Data (Antenna combination 2)**

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 61%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	64.00	38.67 QP	40.00	-1.33	3.00 H	344	25.12	13.55
2	158.30	37.07 QP	43.50	-6.43	1.50 H	259	22.39	14.68
3	191.34	41.39 QP	43.50	-2.11	1.25 H	88	29.27	12.12
4	249.66	43.53 QP	46.00	-2.47	1.25 H	181	30.12	13.41
5	692.87	40.14 QP	46.00	-5.86	1.00 H	232	17.71	22.43
6	792.00	39.51 QP	46.00	-6.49	1.00 H	235	15.76	23.76

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	38.19 QP	40.00	-1.81	1.00 V	190	23.99	14.20
2	63.05	32.75 QP	40.00	-7.25	2.50 V	13	19.11	13.64
3	142.75	33.63 QP	43.50	-9.87	1.00 V	286	19.43	14.20
4	191.34	33.67 QP	43.50	-9.83	2.00 V	64	21.55	12.12
5	593.73	35.85 QP	46.00	-10.15	1.00 V	313	14.78	21.07
6	692.87	39.63 QP	46.00	-6.37	1.25 V	178	17.20	22.43
7	792.00	36.62 QP	46.00	-9.38	1.00 V	151	12.87	23.76

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

802.11b DSSS modulation (Antenna combination 1)

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	46.78 PK	74.00	-27.22	1.15 H	311	13.71	33.07
1	2390.00	40.48 AV	54.00	-13.52	1.15 H	311	7.41	33.07
2	*2412.00	100.00 PK			1.15 H	311	66.86	33.14
2	*2412.00	93.70 AV			1.15 H	311	60.56	33.14
3	4824.00	50.35 PK	74.00	-23.65	1.22 H	347	10.51	39.84
3	4824.00	37.71 AV	54.00	-16.29	1.22 H	347	-2.13	39.84
4	5580.00	62.62 PK	80.00	-17.38	1.15 H	12	21.13	41.49
4	5580.00	54.03 AV	73.70	-19.67	1.15 H	12	12.54	41.49
5	6336.00	59.05 PK	80.00	-20.95	1.14 H	340	16.59	42.46
5	6336.00	55.49 AV	73.70	-18.21	1.14 H	340	13.03	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	52.41 PK	74.00	-21.59	1.11 V	180	19.34	33.07
1	2390.00	45.15 AV	54.00	-8.85	1.11 V	180	12.08	33.07
2	*2412.00	105.63 PK			1.11 V	180	72.49	33.14
2	*2412.00	98.37 AV			1.11 V	180	65.23	33.14
3	4824.00	51.92 PK	74.00	-22.08	1.00 V	46	12.08	39.84
3	4824.00	39.26 AV	54.00	-14.74	1.00 V	46	-0.58	39.84
4	5580.00	63.74 PK	85.63	-21.89	1.00 V	174	22.25	41.49
4	5580.00	55.98 AV	78.37	-22.39	1.00 V	174	14.49	41.49
5	6336.00	58.83 PK	85.63	-26.80	1.16 V	327	16.37	42.46
5	6336.00	55.60 AV	78.37	-22.77	1.16 V	327	13.14	42.46

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	99.77 PK			1.14 H	309	66.56	33.21
1	*2437.00	92.49 AV			1.14 H	309	59.28	33.21
2	4874.00	50.78 PK	74.00	-23.22	1.18 H	13	10.76	40.02
2	4874.00	38.54 AV	54.00	-15.46	1.18 H	13	-1.48	40.02
3	5605.00	65.49 PK	79.77	-14.28	1.14 H	94	23.95	41.54
3	5605.00	58.03 AV	72.49	-14.46	1.14 H	94	16.49	41.54
4	6336.00	58.83 PK	79.77	-20.94	1.14 H	340	16.37	42.46
4	6336.00	55.56 AV	72.49	-16.93	1.14 H	340	13.10	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	105.59 PK			1.13 V	181	72.38	33.21
1	*2437.00	98.30 AV			1.13 V	181	65.09	33.21
2	4874.00	52.28 PK	74.00	-21.72	1.11 V	360	12.26	40.02
2	4874.00	39.97 AV	54.00	-14.03	1.11 V	360	-0.05	40.02
3	5605.00	64.24 PK	85.59	-21.35	1.35 V	90	22.70	41.54
3	5605.00	56.49 AV	78.30	-21.81	1.35 V	90	14.95	41.54
4	6336.00	59.54 PK	85.59	-26.05	1.07 V	328	17.08	42.46
4	6336.00	56.17 AV	78.30	-22.13	1.07 V	328	13.71	42.46

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	97.70 PK			1.12 H	310	64.41	33.29
1	*2462.00	90.42 AV			1.12 H	310	57.13	33.29
2	2483.50	49.30 PK	74.00	-24.70	1.12 H	310	15.95	33.35
2	2483.50	42.02 AV	54.00	-11.98	1.12 H	310	8.67	33.35
3	4924.00	51.41 PK	74.00	-22.59	1.42 H	17	11.19	40.22
3	4924.00	38.81 AV	54.00	-15.19	1.42 H	17	-1.41	40.22
4	5630.00	66.08 PK	77.70	-11.62	1.40 H	94	24.50	41.58
4	5630.00	58.70 AV	70.42	-11.72	1.40 H	94	17.12	41.58
5	6336.00	58.95 PK	77.70	-18.75	1.14 H	340	16.49	42.46
5	6336.00	55.10 AV	70.42	-15.32	1.14 H	340	12.64	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	102.87 PK			1.06 V	195	69.58	33.29
1	*2462.00	95.58 AV			1.06 V	195	62.29	33.29
2	2483.50	54.47 PK	74.00	-19.53	1.06 V	195	21.12	33.35
2	2483.50	47.18 AV	54.00	-6.82	1.06 V	195	13.83	33.35
3	4924.00	51.70 PK	74.00	-22.30	1.08 V	340	11.48	40.22
3	4924.00	39.46 AV	54.00	-14.54	1.08 V	340	-0.76	40.22
4	5630.00	63.85 PK	82.87	-19.02	1.08 V	96	22.27	41.58
4	5630.00	56.20 AV	75.58	-19.38	1.08 V	96	14.62	41.58
5	6336.00	58.61 PK	82.87	-24.26	1.06 V	328	16.15	42.46
5	6336.00	55.53 AV	75.58	-20.05	1.06 V	328	13.07	42.46

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

802.11b DSSS modulation (Antenna combination 2)

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 64%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	41.02 PK	74.00	-32.98	1.96 H	359	8.94	32.08
1	2390.00	33.66 AV	54.00	-20.34	1.96 H	359	1.58	32.08
2	*2412.00	90.20 PK			1.96 H	359	58.01	32.19
2	*2412.00	82.84 AV			1.96 H	359	50.65	32.19
3	4824.00	50.14 PK	74.00	-23.86	1.00 H	0	12.17	37.97
3	4824.00	43.19 AV	54.00	-10.81	1.00 H	0	5.22	37.97
4	5580.00	64.07 PK	70.20	-6.13	1.66 H	276	24.71	39.36
4	5580.00	56.02 AV	62.84	-6.82	1.66 H	276	16.66	39.36
5	6336.00	57.16 PK	74.00	-16.84	1.63 H	176	15.71	41.44
5	6336.00	53.81 AV	54.00	-0.19	1.63 H	176	12.36	41.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.99 PK	74.00	-15.01	1.11 V	359	26.91	32.08
1	2390.00	51.42 AV	54.00	-2.58	1.11 V	359	19.34	32.08
2	*2412.00	108.17 PK			1.11 V	359	75.98	32.19
2	*2412.00	100.60 AV			1.11 V	359	68.41	32.19
3	4824.00	53.54 PK	74.00	-20.46	1.17 V	46	15.57	37.97
3	4824.00	46.49 AV	54.00	-7.51	1.17 V	46	8.52	37.97
4	5580.00	63.93 PK	88.17	-24.24	1.34 V	196	24.57	39.36
4	5580.00	56.35 AV	80.60	-24.25	1.34 V	196	16.99	39.36
5	6336.00	58.22 PK	88.17	-29.95	1.00 V	158	16.77	41.44
5	6336.00	55.13 AV	80.60	-25.47	1.00 V	158	13.68	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. " * " : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 62%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	44.62 PK	74.00	-29.38	1.63 H	21	12.64	31.98
1	2368.00	34.08 AV	54.00	-19.92	1.63 H	21	2.10	31.98
2	*2437.00	94.43 PK			1.02 H	5	62.13	32.30
2	*2437.00	87.02 AV			1.02 H	5	54.72	32.30
3	2496.00	43.94 PK	74.00	-30.06	1.00 H	23	11.36	32.58
3	2496.00	34.08 AV	54.00	-19.92	1.00 H	23	1.50	32.58
4	4874.00	48.30 PK	74.00	-25.70	1.43 H	132	10.23	38.07
4	4874.00	36.20 AV	54.00	-17.80	1.43 H	132	-1.87	38.07
5	5605.00	63.39 PK	74.43	-11.04	1.66 H	268	23.99	39.40
5	5605.00	55.48 AV	67.02	-11.54	1.66 H	268	16.08	39.40
6	6336.00	58.09 PK	74.43	-16.34	1.65 H	176	16.64	41.44
6	6336.00	54.66 AV	67.02	-12.36	1.65 H	176	13.21	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 62%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	56.07 PK	74.00	-17.93	1.16 V	20	24.09	31.98
1	2368.00	47.01 AV	54.00	-6.99	1.16 V	20	15.03	31.98
2	*2437.00	108.10 PK			1.12 V	24	75.80	32.30
2	*2437.00	100.76 AV			1.12 V	24	68.46	32.30
3	2496.00	52.02 PK	74.00	-21.98	1.12 V	27	19.44	32.58
3	2496.00	46.87 AV	54.00	-7.13	1.12 V	27	14.29	32.58
4	4874.00	49.42 PK	74.00	-24.58	1.37 V	76	11.35	38.07
4	4874.00	37.16 AV	54.00	-16.84	1.37 V	76	-0.91	38.07
5	5605.00	63.06 PK	88.10	-25.04	1.60 V	54	23.66	39.40
5	5605.00	55.12 AV	80.76	-25.64	1.60 V	54	15.72	39.40
6	6336.00	61.64 PK	88.10	-26.46	1.31 V	78	20.19	41.44
6	6336.00	59.81 AV	80.76	-20.95	1.31 V	78	18.36	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 64%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	92.00 PK			1.36 H	198	59.58	32.42
1	*2462.00	84.53 AV			1.36 H	198	52.11	32.42
2	2483.50	43.27 PK	74.00	-30.73	1.36 H	198	10.75	32.52
3	4924.00	48.14 PK	74.00	-25.86	1.22 H	285	9.96	38.18
3	4924.00	41.19 AV	54.00	-12.81	1.22 H	285	3.01	38.18
4	5630.00	62.32 PK	72.00	-9.68	1.65 H	275	22.88	39.44
4	5630.00	54.42 AV	64.53	-10.11	1.65 H	275	14.98	39.44
5	6336.00	57.67 PK	72.00	-14.33	1.43 H	181	16.22	41.44
5	6336.00	54.44 AV	64.53	-10.09	1.43 H	181	12.99	41.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	105.16 PK			1.12 V	5	72.74	32.42
1	*2462.00	97.94 AV			1.12 V	5	65.52	32.42
2	2483.50	56.43 PK	74.00	-17.57	1.12 V	5	23.91	32.52
2	2483.50	49.21 AV	54.00	-4.79	1.12 V	5	16.69	32.52
3	4924.00	51.50 PK	74.00	-22.50	1.12 V	20	13.32	38.18
3	4924.00	44.40 AV	54.00	-9.60	1.12 V	20	6.22	38.18
4	5630.00	59.43 PK	74.00	-14.57	1.00 V	19	19.99	39.44
4	5630.00	51.31 AV	54.00	-2.69	1.00 V	19	11.87	39.44
5	6336.00	61.62 PK	85.16	-23.54	1.31 V	77	20.17	41.44
5	6336.00	59.74 AV	77.94	-18.20	1.31 V	77	18.29	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

802.11g OFDM modulation (Antenna combination 1)

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	53.24 PK	74.00	-20.76	1.16 H	313	20.17	33.07
1	2390.00	46.33 AV	54.00	-7.67	1.16 H	313	13.26	33.07
2	*2412.00	96.80 PK			1.16 H	313	63.66	33.14
2	*2412.00	87.89 AV			1.16 H	313	54.75	33.14
3	4824.00	49.13 PK	74.00	-24.87	1.00 H	350	9.29	39.84
3	4824.00	36.68 AV	54.00	-17.32	1.00 H	350	-3.16	39.84
4	5580.00	64.67 PK	76.80	-12.13	1.03 H	89	23.18	41.49
4	5580.00	54.87 AV	67.89	-13.02	1.03 H	89	13.38	41.49
5	6336.00	58.14 PK	76.80	-18.66	1.01 H	344	15.68	42.46
5	6336.00	54.35 AV	67.89	-13.54	1.01 H	344	11.89	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.05 PK	74.00	-16.95	1.00 V	296	23.98	33.07
1	2390.00	47.67 AV	54.00	-6.33	1.00 V	296	14.60	33.07
2	*2412.00	100.61 PK			1.00 V	296	67.47	33.14
2	*2412.00	91.23 AV			1.00 V	296	58.09	33.14
3	4824.00	49.05 PK	74.00	-24.95	1.00 V	12	9.21	39.84
3	4824.00	37.33 AV	54.00	-16.67	1.00 V	12	-2.51	39.84
4	5580.00	61.42 PK	74.00	-12.58	1.00 V	181	19.93	41.49
4	5580.00	51.72 AV	54.00	-2.28	1.00 V	181	10.23	41.49
5	6336.00	58.38 PK	80.61	-22.23	1.27 V	321	15.92	42.46

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	48.24 PK	74.00	-25.76	1.20 H	157	15.24	33.00
1	2368.00	37.67 AV	54.00	-16.33	1.20 H	157	4.67	33.00
2	*2437.00	96.30 PK			1.13 H	310	63.09	33.21
2	*2437.00	86.68 AV			1.13 H	310	53.47	33.21
3	4874.00	49.22 PK	74.00	-24.78	1.52 H	13	9.20	40.02
3	4874.00	37.22 AV	54.00	-16.78	1.52 H	13	-2.80	40.02
4	5605.00	65.51 PK	76.30	-7.79	1.38 H	76	23.97	41.54
4	5605.00	55.96 AV	66.68	-7.72	1.38 H	76	14.42	41.54
5	6336.00	58.17 PK	76.30	-15.13	1.14 H	341	15.71	42.46
5	6336.00	54.32 AV	66.68	-9.36	1.14 H	341	11.86	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	50.53 PK	74.00	-23.47	1.14 V	193	17.53	33.00
1	2368.00	40.48 AV	54.00	-13.52	1.14 V	193	7.48	33.00
2	*2437.00	102.02 PK			1.11 V	180	68.81	33.21
2	*2437.00	92.95 AV			1.11 V	180	59.74	33.21
3	4874.00	52.89 PK	74.00	-21.11	1.11 V	93	12.87	40.02
3	4874.00	39.92 AV	54.00	-14.08	1.11 V	93	-0.10	40.02
4	5605.00	64.29 PK	82.02	-14.73	1.09 V	90	22.75	41.54
4	5605.00	55.37 AV	72.95	-14.58	1.09 V	90	13.83	41.54
5	6336.00	58.34 PK	82.02	-20.68	1.08 V	317	15.88	42.46
5	6336.00	54.87 AV	72.95	-15.08	1.08 V	317	12.41	42.46

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 991hPa	TESTED BY	Rush Kao
TEST MODE	1 (Antenna combination 1)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	92.75 PK			1.12 H	309	59.46	33.29
1	*2462.00	84.18 AV			1.12 H	309	50.89	33.29
2	2483.50	52.28 PK	74.00	-21.72	1.12 H	309	18.93	33.35
2	2483.50	43.71 AV	54.00	-10.29	1.12 H	309	10.36	33.35
3	4924.00	49.15 PK	74.00	-24.85	1.00 H	93	8.93	40.22
3	4924.00	37.15 AV	54.00	-16.85	1.00 H	93	-3.07	40.22
4	5630.00	63.41 PK	72.75	-9.34	1.00 H	88	21.83	41.58
4	5630.00	54.10 AV	64.18	-10.08	1.00 H	88	12.52	41.58
5	6336.00	58.10 PK	72.75	-14.65	1.01 H	343	15.64	42.46
5	6336.00	54.67 AV	64.18	-9.51	1.01 H	343	12.21	42.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	98.60 PK			1.11 V	180	65.31	33.29
1	*2462.00	89.15 AV			1.11 V	180	55.86	33.29
2	2483.50	58.13 PK	74.00	-15.87	1.11 V	180	24.78	33.35
2	2483.50	48.68 AV	54.00	-5.32	1.11 V	180	15.33	33.35
3	4924.00	52.26 PK	74.00	-21.74	1.13 V	91	12.04	40.22
3	4924.00	38.88 AV	54.00	-15.12	1.13 V	91	-1.34	40.22
4	5630.00	59.78 PK	74.00	-14.22	1.09 V	212	18.20	41.58
4	5630.00	50.10 AV	54.00	-3.90	1.09 V	212	8.52	41.58
5	6336.00	58.25 PK	78.60	-20.35	1.08 V	317	15.79	42.46
5	6336.00	55.13 AV	69.15	-14.02	1.08 V	317	12.67	42.46

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

**802.11g OFDM modulation (Antenna combination 2)**

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 62%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	47.51 PK	74.00	-26.49	1.36 H	237	15.43	32.08
2	*2412.00	90.40 PK			1.36 H	237	58.21	32.19
2	*2412.00	80.42 AV			1.36 H	237	48.23	32.19
3	4824.00	47.43 PK	74.00	-26.57	1.44 H	76	9.46	37.97
4	5580.00	62.40 PK	74.00	-11.60	1.44 H	76	23.04	39.36
4	5580.00	51.88 AV	54.00	-2.12	1.44 H	76	12.52	39.36
5	6336.00	57.41 PK	74.00	-16.59	1.81 H	335	15.96	41.44
5	6336.00	53.92 AV	54.00	-0.08	1.81 H	335	12.47	41.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.42 PK	74.00	-13.58	1.00 V	233	28.34	32.08
1	2390.00	50.42 AV	54.00	-3.58	1.00 V	233	18.34	32.08
2	2412.00	103.31 PK			1.00 V	233	71.12	32.19
2	2412.00	93.31 AV			1.00 V	233	61.12	32.19
3	4824.00	49.26 PK	74.00	-24.74	1.11 V	125	11.29	37.97
4	5580.00	60.86 PK	74.00	-13.14	1.08 V	220	21.50	39.36
4	5580.00	50.46 AV	54.00	-3.54	1.08 V	220	11.10	39.36
5	6336.00	60.86 PK	83.31	-22.45	1.31 V	257	19.41	41.44
5	6336.00	58.65 AV	73.31	-14.66	1.31 V	257	17.20	41.44

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. “ * ” : Fundamental frequency

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 62%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	41.50 PK	74.00	-32.50	1.12 H	125	9.52	31.98
2	*2437.00	91.32 PK			1.32 H	211	59.02	32.30
2	*2437.00	81.66 AV			1.32 H	211	49.36	32.30
3	2496.00	40.77 PK	74.00	-33.23	1.00 H	230	8.19	32.58
3	2496.00	31.25 AV	54.00	-22.75	1.00 H	230	-1.33	32.58
4	4874.00	46.50 PK	74.00	-27.50	1.43 H	130	8.43	38.07
5	5605.00	61.95 PK	74.00	-12.05	1.45 H	75	22.55	39.40
5	5605.00	51.18 AV	54.00	-2.82	1.45 H	75	11.78	39.40
6	6336.00	57.18 PK	74.00	-16.82	1.55 H	339	15.73	41.44
6	6336.00	53.76 AV	54.00	-0.24	1.55 H	339	12.31	41.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	53.82 PK	74.00	-20.18	1.00 V	231	21.84	31.98
1	2368.00	44.21 AV	54.00	-9.79	1.00 V	231	12.23	31.98
2	*2437.00	101.98 PK			1.14 V	351	69.68	32.30
2	*2437.00	92.23 AV			1.14 V	351	59.93	32.30
3	2496.00	50.55 PK	74.00	-23.45	1.00 V	120	17.97	32.58
3	2496.00	43.95 AV	54.00	-10.05	1.00 V	120	11.37	32.58
4	4874.00	47.93 PK	74.00	-26.07	1.00 V	0	9.86	38.07
5	5605.00	61.01 PK	74.00	-12.99	1.27 V	258	21.61	39.40
5	5605.00	51.06 AV	54.00	-2.94	1.27 V	258	11.66	39.40
6	6336.00	60.89 PK	81.98	-21.09	1.06 V	256	19.44	41.44
6	6336.00	58.83 AV	72.23	-13.40	1.06 V	256	17.38	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency



EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 62%RH, 991hPa	TESTED BY	Brad Wu
TEST MODE	2 (Antenna combination 2)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	42.38 PK	74.00	-31.62	1.29 H	19	10.40	31.98
2	*2462.00	89.39 PK			1.28 H	220	56.97	32.42
2	*2462.00	79.72 AV			1.28 H	220	47.30	32.42
3	2483.50	47.07 PK	74.00	-26.93	1.22 H	107	14.55	32.52
4	4924.00	48.55 PK	74.00	-25.45	1.00 H	123	10.36	38.18
5	5630.00	65.80 PK	69.39	-3.59	1.29 H	253	26.36	39.44
5	5630.00	56.40 AV	59.72	-3.32	1.29 H	253	16.96	39.44
6	6336.00	57.21 PK	74.00	-16.79	1.22 H	107	15.77	41.44
6	6336.00	52.65 AV	54.00	-1.35	1.22 H	107	11.21	41.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2368.00	51.06 PK	74.00	-22.94	1.17 V	26	19.08	31.98
1	2368.00	42.85 AV	54.00	-11.15	1.17 V	26	10.87	31.98
2	*2462.00	101.96 PK			1.17 V	255	69.54	32.42
2	*2462.00	91.91 AV			1.17 V	255	59.49	32.42
3	2483.50	59.64 PK	74.00	-14.36	1.17 V	255	27.12	32.52
3	2483.50	49.59 AV	54.00	-4.41	1.17 V	255	17.07	32.52
4	4924.00	49.42 PK	74.00	-24.58	1.34 V	5	11.23	38.18
5	5630.00	64.97 PK	81.96	-16.99	1.39 V	257	25.53	39.44
5	5630.00	55.26 AV	71.91	-16.65	1.39 V	257	15.82	39.44
6	6336.00	60.87 PK	81.96	-21.09	1.31 V	257	19.42	41.44
6	6336.00	58.30 AV	71.91	-13.61	1.31 V	257	16.85	41.44

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK 30	100049	Aug. 12, 2005

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

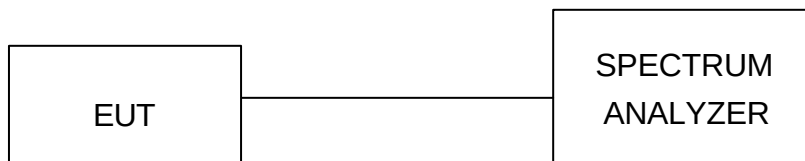
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

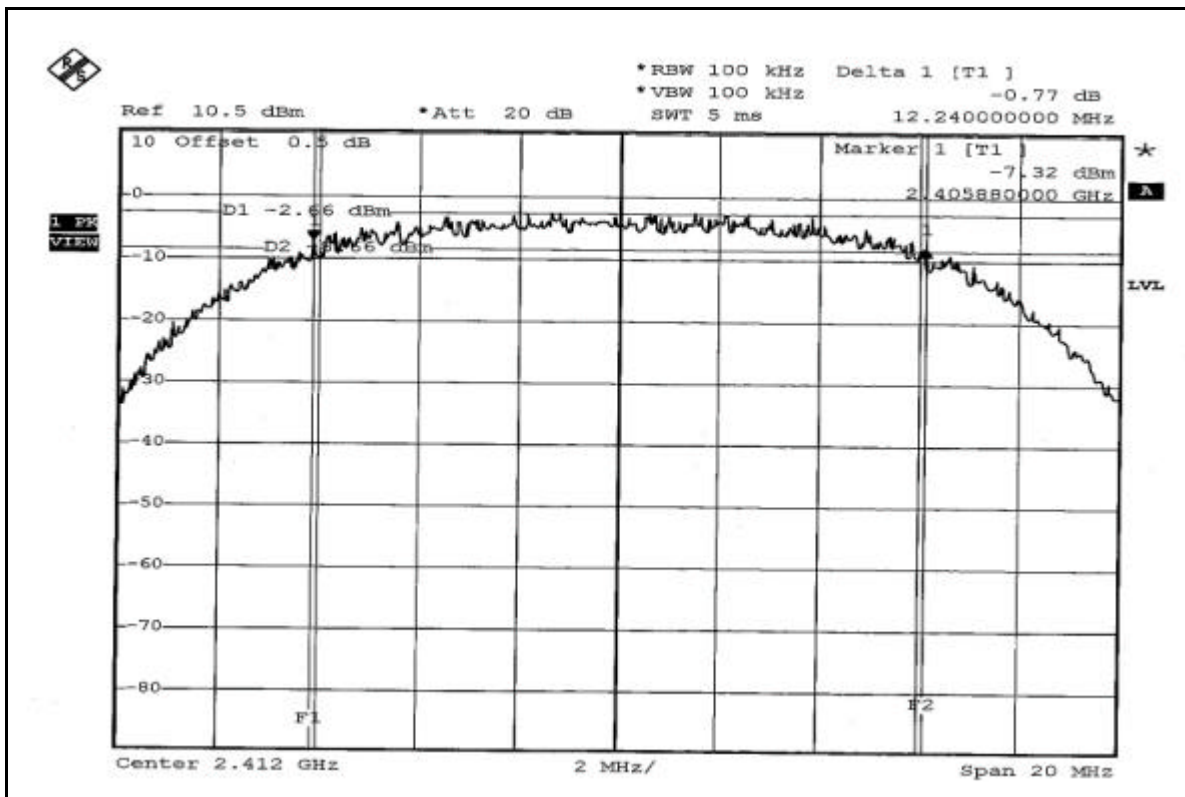
4.3.7 TEST RESULTS

802.11b DSSS modulation

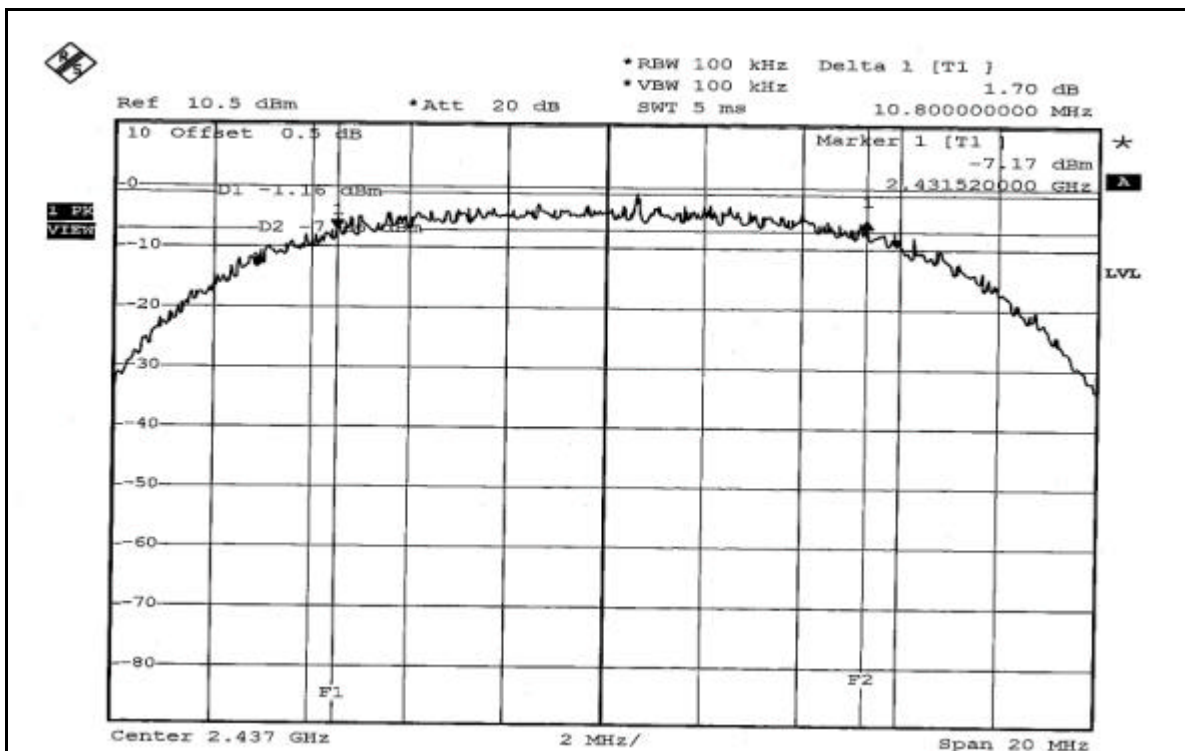
EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 51%RH, 991hPa
TESTED BY	Rush Kao		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.24	0.5	PASS
6	2437	10.80	0.5	PASS
11	2462	11.52	0.5	PASS

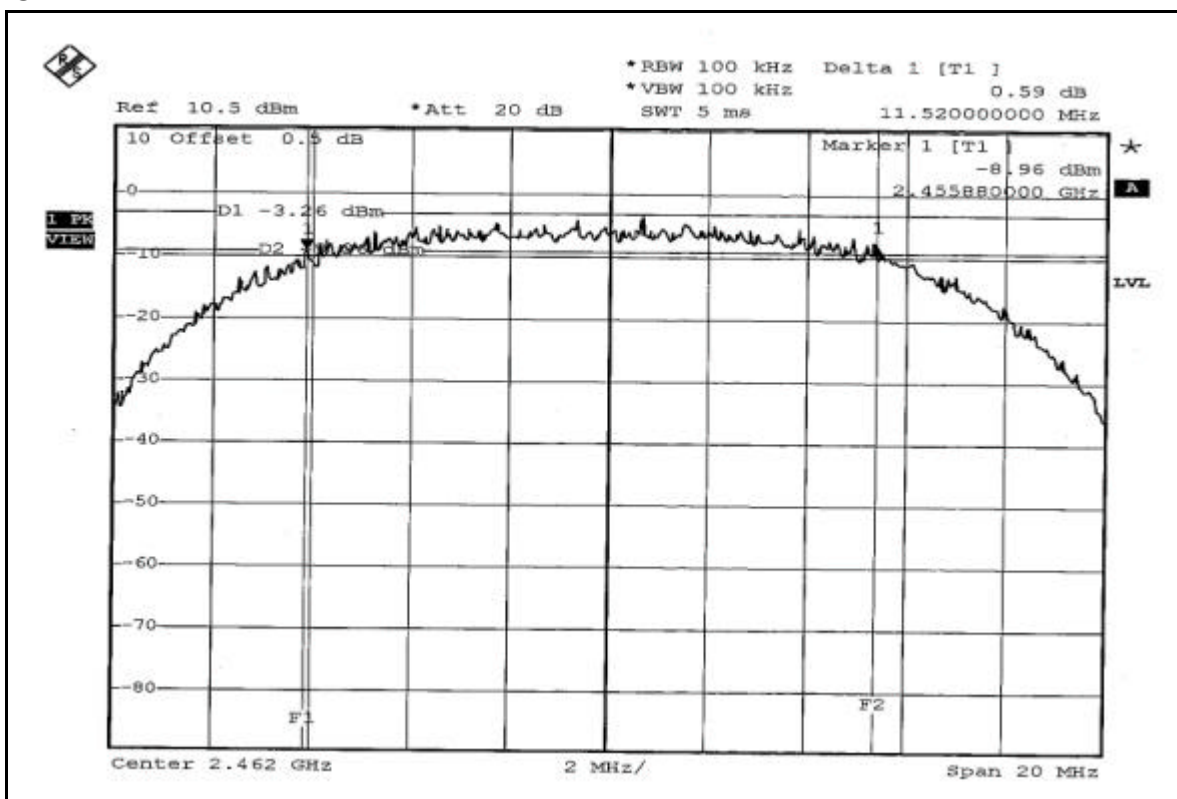
CH1



CH6



CH11

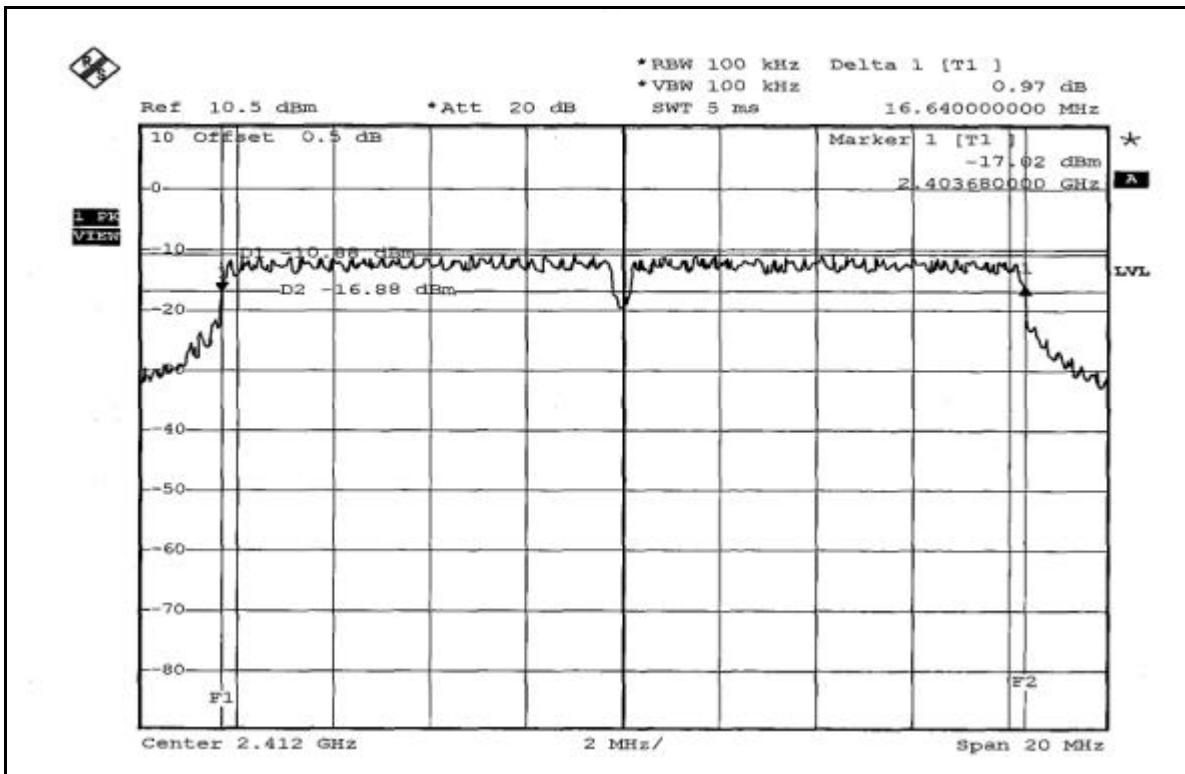


802.11g OFDM modulation

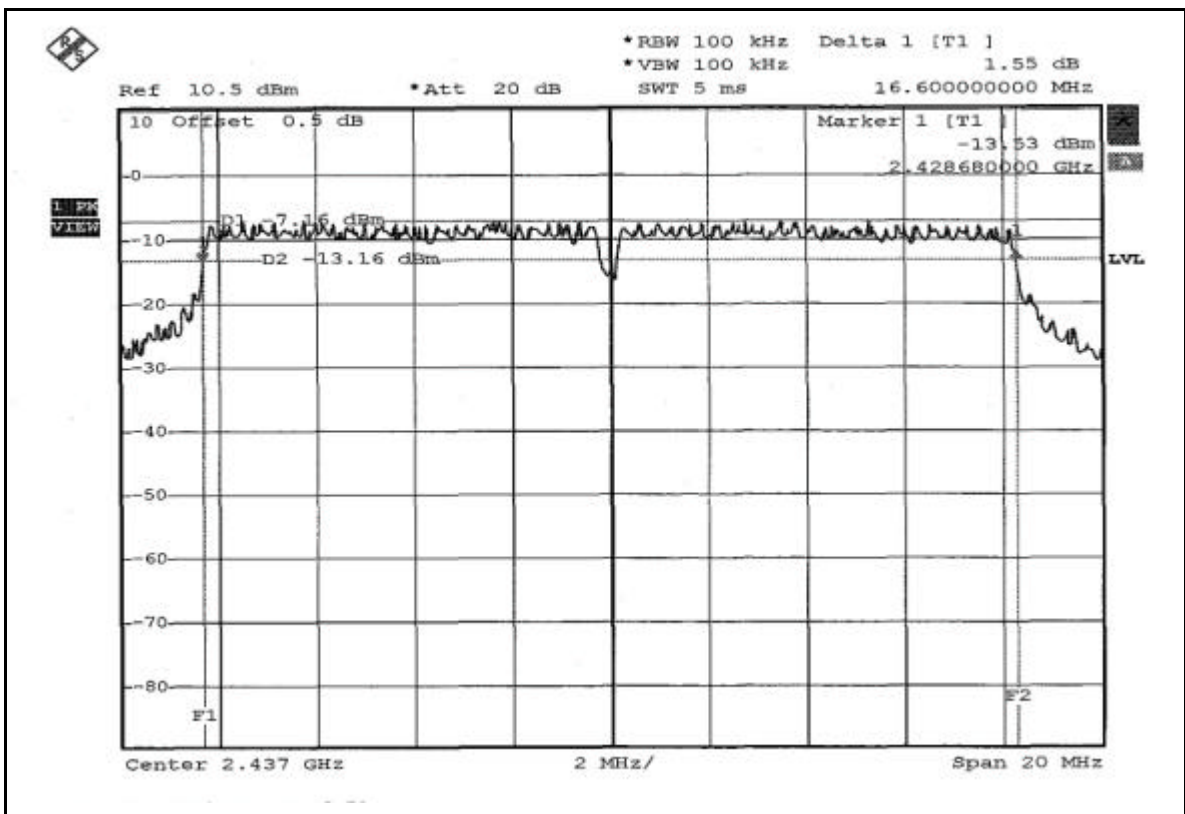
EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 51%RH, 991hPa
TESTED BY	Rush Kao		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.64	0.5	PASS
6	2437	16.60	0.5	PASS
11	2462	16.60	0.5	PASS

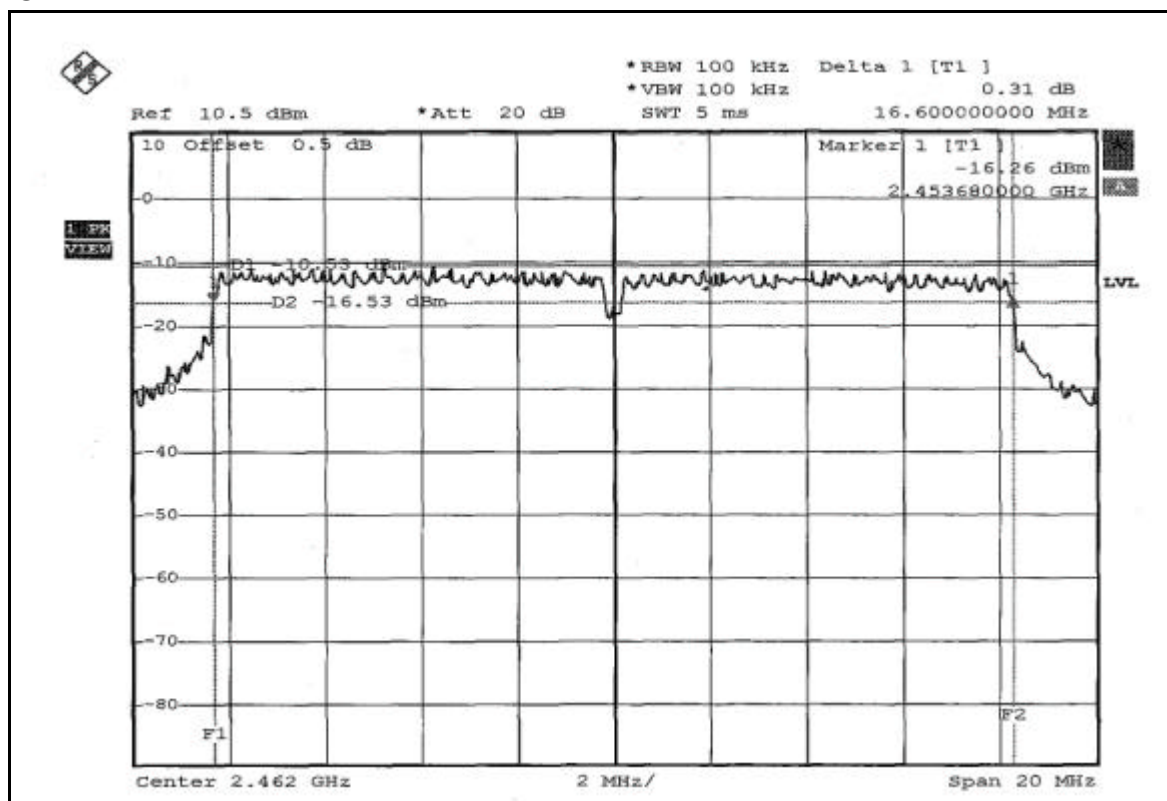
CH1



CH6



CH11



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2005
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Feb. 01, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:

The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS modulation

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 51%RH, 991hPa
TESTED BY	Rush Kao		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	7.096	8.51	30	PASS
6	2437	7.980	9.02	30	PASS
11	2462	6.353	8.03	30	PASS

802.11g OFDM modulation

EUT	802.11a/b/g wireless sensor	MODEL	AM-5012-11AG
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 51%RH, 991hPa
TESTED BY	Rush Kao		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	7.112	8.52	30	PASS
6	2437	10.069	10.03	30	PASS
11	2462	6.324	8.01	30	PASS