

FCC TEST REPORT (15.407)

REPORT NO.: RF940629L08
MODEL NO.: A5020
RECEIVED: Jul. 14, 2005
TESTED: Jul. 14 ~ Aug. 20, 2005
ISSUED: Aug. 26, 2005

APPLICANT: AirMagnet, Inc.

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0528
ILAC MRA



No. 2177-01

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1. CERTIFICATION

PRODUCT: AirMagnet SmartEdge Sensor

MODEL: A5020

BRAND: AirMagnet

APPLICANT: AirMagnet, Inc.

TESTED: Jul. 14 ~ Aug. 20, 2005

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart E (Section 15.407)
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 : Rennie Wang , **DATE:** Aug. 26, 2005
Rennie Wang

TECHNICAL
ACCEPTANCE : Gary Chang , **DATE:** Aug. 26, 2005
Responsible for RF Gary Chang

APPROVED BY : Cody Chang , **DATE:** Aug. 26, 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 E (Section 15.407)			
Standard Section	Test Type	Result	Remark
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.98dB at 18.919MHz
15.407(b)(1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.12dB at 667.0MHz
15.407(a)(1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	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	3.73 dB
	200MHz ~ 1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	AirMagnet SmartEdge Sensor
MODEL NO.	A5020
POWER SUPPLY	48Vdc from POE 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: 2.412 ~ 2.462GHz 802.11a: 5.150 ~ 5.350GHz and 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	802.11b & 802.11g: 11 802.11a: 13
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz
OUTPUT POWER	51.168mW for 2.412 ~ 2.462GHz 14.421mW for 5.150 ~ 5.350GHz 32.137mW for 5.725 ~ 5.850GHz
ANTENNA TYPE	Refer to Note 2 as below
DATA CABLE	NA
I/O PORTS	RJ45, RS232
ASSOCIATED DEVICES	NA

NOTE:

- The EUT was operated with the following POE and adapters:

POE	
BRAND	PowerDsine 3001
MODEL	PD-3001/AC
INPUT	100-250Vac, 50-60Hz, 0.5A
OUTPUT	48Vdc, 0.35A
POWER LINE	AC 1.2m non-shielded cable without core

Adapter 1	
BRAND	ENG
MODEL	57-12-1500
INPUT	120Vac, 60Hz, 32W
OUTPUT	12Vdc, 1500mA
POWER LINE	DC 1.8m non-shielded cable without core

Adapter 2	
BRAND	FAIRWAY
MODEL	VE20-120
INPUT	120-240Vac, 50-60Hz, 1A
OUTPUT	12Vdc, 1.66A
POWER LINE	DC 1.6m non-shielded cable without core AC 1.5m non-shielded cable without core

2. The following antennas were provided to this EUT.

Antenna Type	Antenna	Gain (dBi)		Antenna connector
		2.4G	5G	
Dual-Band Omni-Directional Antenna	SAA05-22063A	5	7	RP TNC Plug
Dual Band Dipole Antenna	SDW0939A1	2.05	2.27	RP-TNC(M)
Dual-Band Directional Antenna	SAA05-22056A	6	8	RP TNC Plug

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

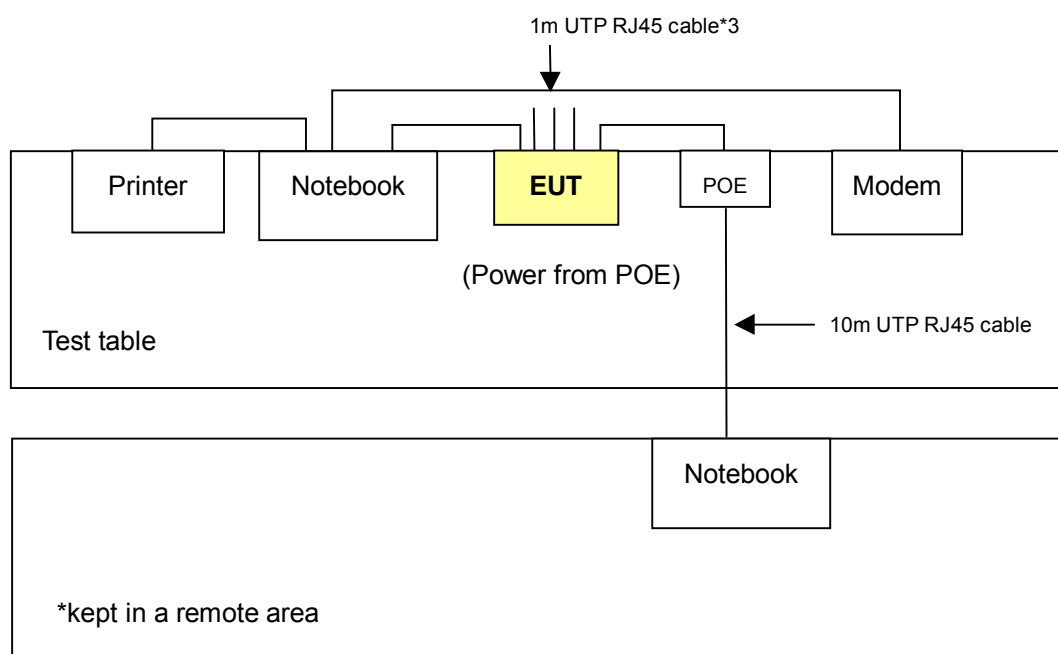
Operated in 5150 ~ 5250MHz, 5250MHz ~ 5350MHz bands:

Eight channels are provided to this EUT.

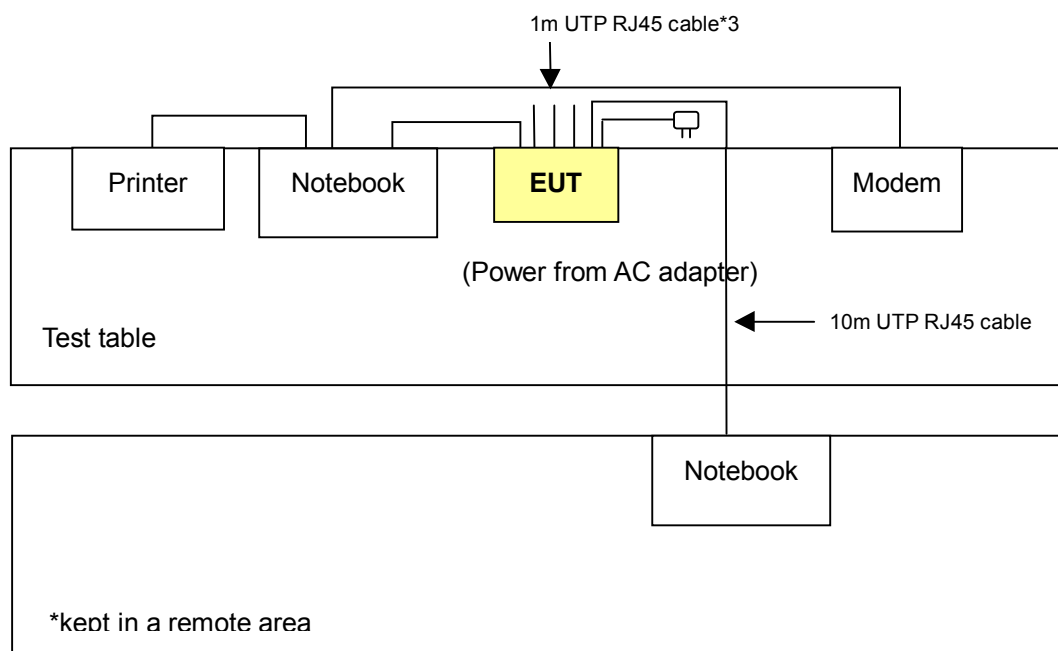
Channel	Frequency
1	5180 MHz
2	5200 MHz
3	5220 MHz
4	5240 MHz
5	5260 MHz
6	5280 MHz
7	5300 MHz
8	5320 MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

(Power from POE)



(Power from AC adapter)



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
A1	-	√	-	-	Power from POE (PD-3001/AC) with Antenna SAA05-22063A
A2	-	√	-	-	Power from POE (PD-3001/AC) with Antenna SDW0939A1
A3	√	√	-	-	Power from POE (PD-3001/AC) with Antenna SAA05-22056A
B1	-	√	-	-	Power from AC Adapter (57-12-1500) with Antenna SAA05-22063A
B2	-	√	-	-	Power from AC Adapter (57-12-1500) with Antenna SDW0939A1
B3	√	√	-	-	Power from AC Adapter (57-12-1500) with Antenna SAA05-22056A
C1	-	√	√	-	Power from AC Adapter (VE20-120) with Antenna SAA05-22063A
C2	-	√	√	-	Power from AC Adapter (VE20-120) with Antenna SDW0939A1
C3	√	√	√	√	Power from AC Adapter (VE20-120) with Antenna SAA05-22056A

Where PLC: Power Line Conducted Emission
RE≥1G: Radiated Emission above 1GHz

RE<1G RE: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

"-": No effect

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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A3	802.11a	1 to 8	5	OFDM	BPSK	6
B3	802.11a	1 to 8	5	OFDM	BPSK	6
C3	802.11a	1 to 8	5	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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A1 ~ A3	802.11a	1 to 8	5	OFDM	BPSK	6
B1 ~ B3	802.11a	1 to 8	5	OFDM	BPSK	6
C1 ~ C3	802.11a	1 to 8	5	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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
C1	802.11a	1 to 8	1, 4, 5, 8	OFDM	BPSK	6
C2	802.11a	1 to 8	1, 4, 5, 8	OFDM	BPSK	6
C3	802.11a	1 to 8	1, 4, 5, 8	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)
802.11a	1 to 8	1, 8	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)
802.11a	1 to 8	1, 4, 5, 8	OFDM	BPSK	6



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a AirMagnet SmartEdge Sensor. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

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	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY047265	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008248	IFAXDM1414
4	NOTEBOOK COMPUTER	DELL	PP05L	20838027664	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m shielded cable
3	1.2m shielded cable
4	NA

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

4. TEST TYPES AND RESULTS (5150 ~ 5350MHz Band)

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	100288	Nov. 06, 2005
RF signal cable Woken	5D-FB	Cable-HyC02-01	Jan. 09, 2006
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 20, 2006
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 20, 2006
Software ADT	ADT_Cond_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 3.
 3. The VCCI Site Registration No. is C-2047.



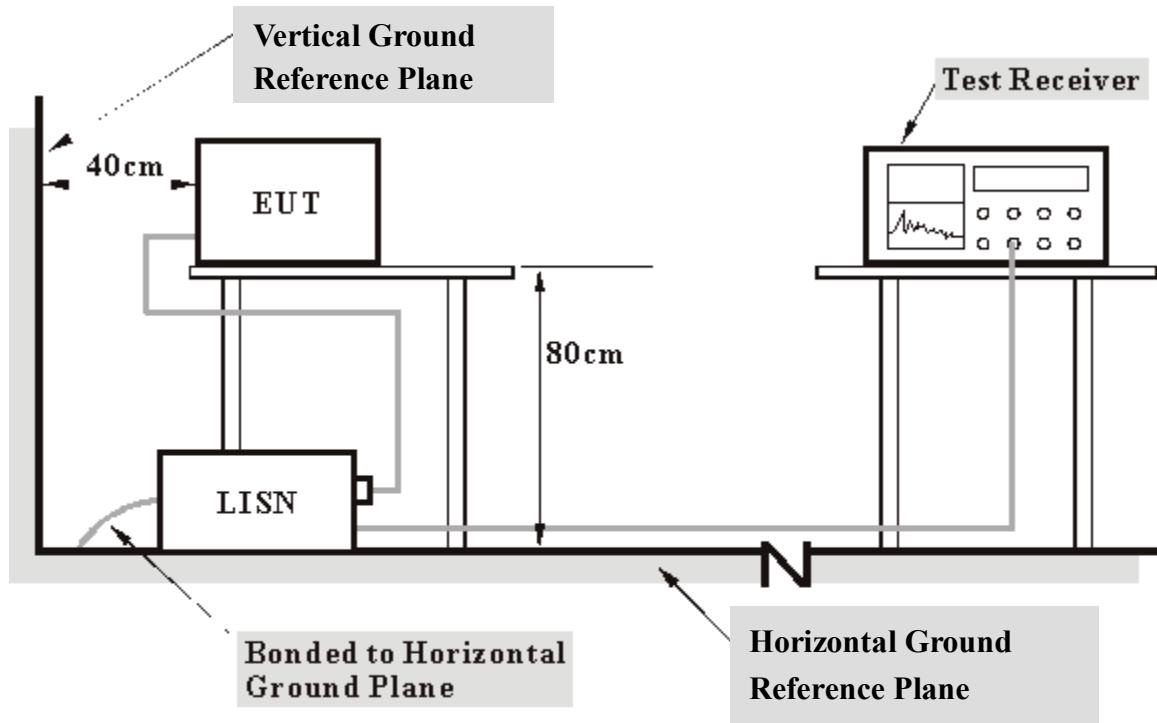
4.1.3 TEST PROCEDURES

- 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 notebook via an RJ45 cable and placed on a testing table.
- b. The notebook ran a test program (provided by manufacturer) to enable all functions 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 prints them on paper.
- f. Step c ~ e was repeated.

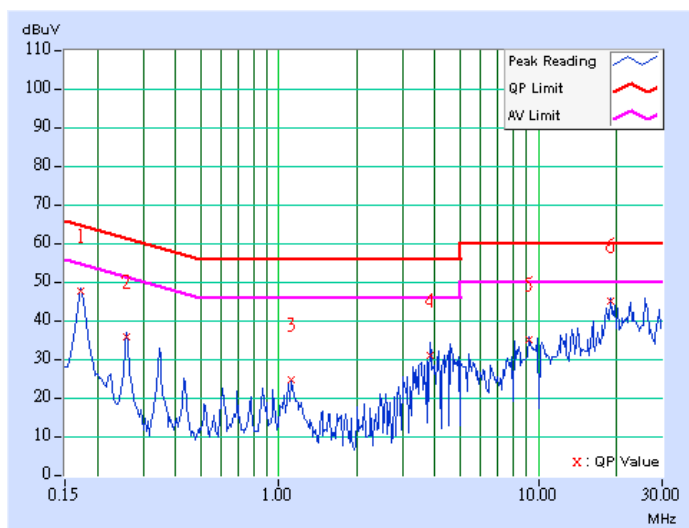
4.1.7 TEST RESULTS

Conducted Worst-Case Data (Power from POE)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 1
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A3	TESTED BY	William Chien

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	0.173	0.11	46.87	-	46.98	-	64.82	54.82	-17.84	-
2	0.259	0.11	35.12	-	35.23	-	61.46	51.46	-26.22	-
3	1.121	0.23	24.11	-	24.34	-	56.00	46.00	-31.66	-
4	3.810	0.29	30.24	-	30.53	-	56.00	46.00	-25.47	-
5	9.178	0.42	34.12	-	34.54	-	60.00	50.00	-25.46	-
6	18.924	0.89	44.12	-	45.01	-	60.00	50.00	-14.99	-

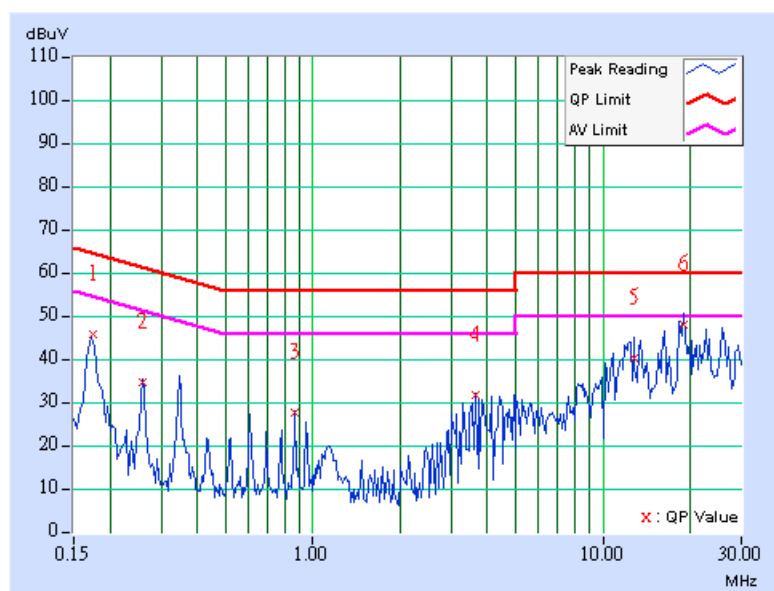
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 2
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A3	TESTED BY	William Chien

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	0.174	0.11	45.11	-	45.22	-	64.75	54.75	-19.53	-
2	0.260	0.11	34.01	-	34.12	-	61.44	51.44	-27.32	-
3	0.865	0.21	26.88	-	27.09	-	56.00	46.00	-28.91	-
4	3.638	0.28	31.02	-	31.30	-	56.00	46.00	-24.70	-
5	12.744	0.60	39.41	-	40.01	-	60.00	50.00	-19.99	-
6	18.919	0.91	47.11	-	48.02	-	60.00	50.00	-11.98	-

- 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.

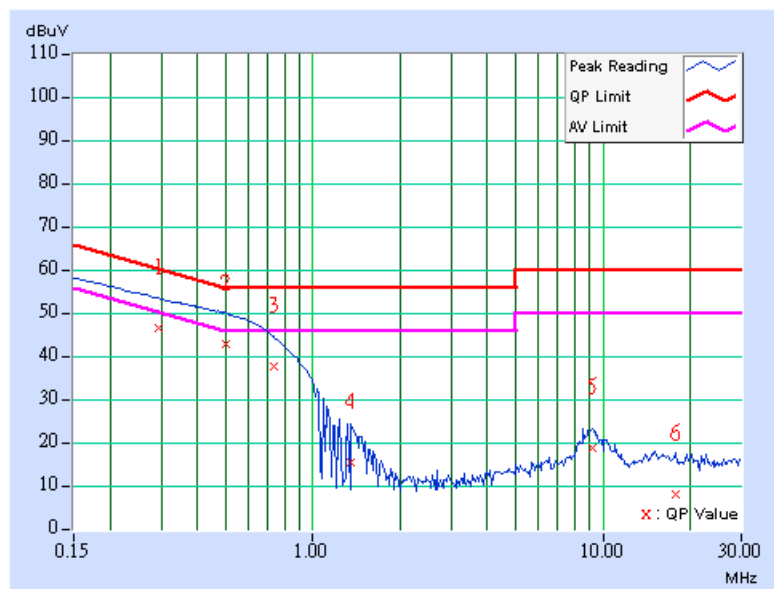


Conducted Worst-Case Data (Power from AC adapter_57-12-1500)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 1
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B3	TESTED BY	William Chien

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	0.295	0.10	46.17	-	46.27	-	60.40	50.40	-14.13	-
2	0.500	0.12	42.28	-	42.40	-	56.00	46.00	-13.60	-
3	0.736	0.16	36.97	-	37.13	-	56.00	46.00	-18.87	-
4	1.359	0.20	15.08	-	15.28	-	56.00	46.00	-40.72	-
5	9.203	0.29	18.38	-	18.67	-	60.00	50.00	-41.33	-
6	17.852	0.63	7.58	-	8.21	-	60.00	50.00	-51.79	-

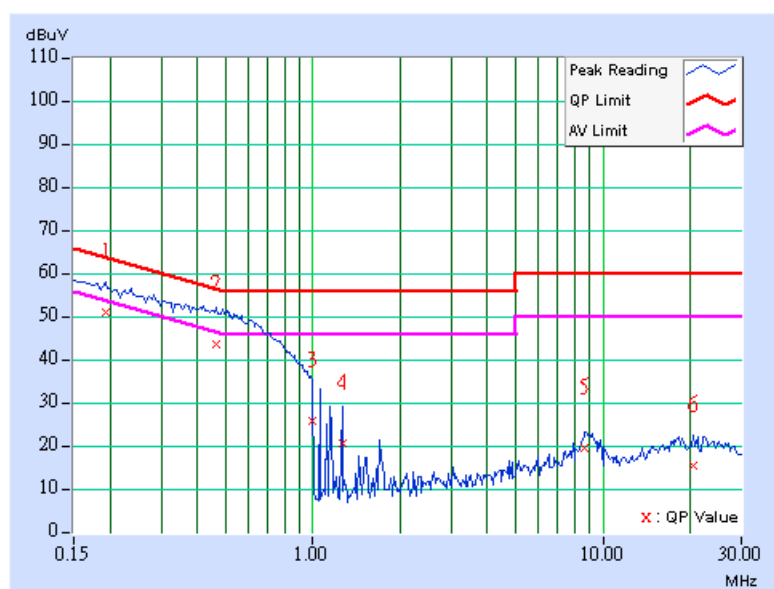
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 2
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B3	TESTED BY	William Chien

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	0.193	0.10	50.12	-	50.22	-	63.91	53.91	-13.69	-
2	0.463	0.11	42.90	-	43.01	-	56.65	46.65	-13.64	-
3	0.998	0.20	25.25	-	25.45	-	56.00	46.00	-30.55	-
4	1.262	0.20	19.87	-	20.07	-	56.00	46.00	-35.93	-
5	8.664	0.36	18.72	-	19.08	-	60.00	50.00	-40.92	-
6	20.598	0.82	14.85	-	15.67	-	60.00	50.00	-44.33	-

- 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.

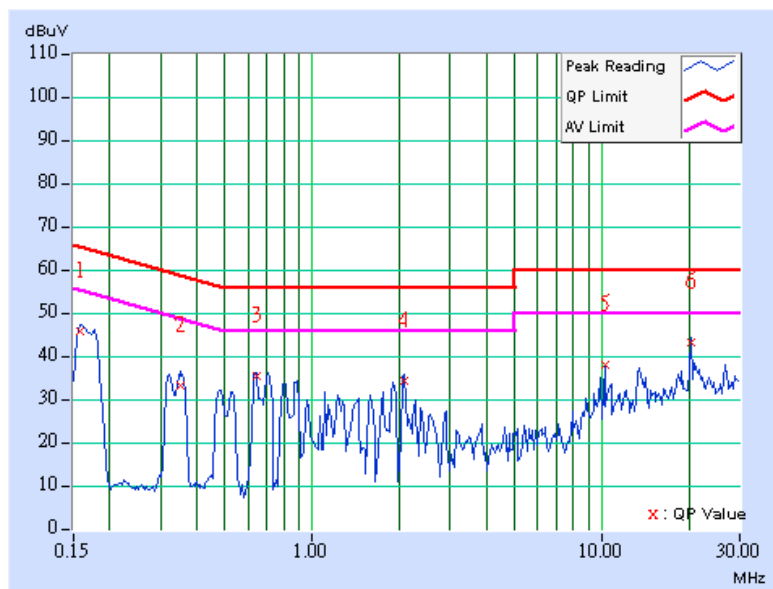


Conducted Worst-Case Data (Power from AC adapter_VE20-120)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 1
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	William Chien

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	44.80	-	44.91	-	65.58	55.58	-20.67	-
2	0.353	0.12	32.43	-	32.55	-	58.89	48.89	-26.34	-
3	0.642	0.16	34.38	-	34.54	-	56.00	46.00	-21.46	-
4	2.070	0.25	33.44	-	33.69	-	56.00	46.00	-22.31	-
5	10.242	0.45	37.11	-	37.56	-	60.00	50.00	-22.44	-
6	20.258	1.00	42.50	-	43.50	-	60.00	50.00	-16.50	-

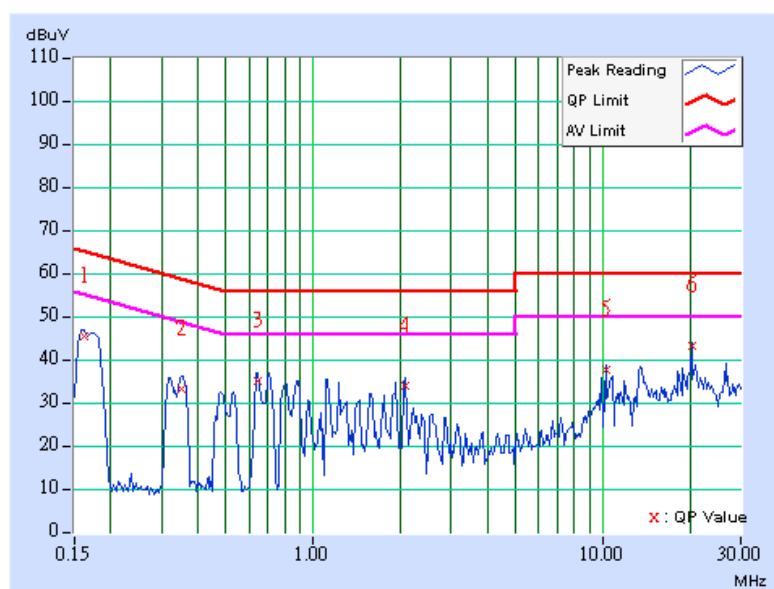
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	PHASE	Line 2
CHANNEL	Channel 5	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	William Chien

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	0.162	0.11	44.63	-	44.74	-	65.38	55.38	-20.64	-
2	0.349	0.12	32.36	-	32.48	-	58.98	48.98	-26.50	-
3	0.646	0.17	34.07	-	34.24	-	56.00	46.00	-21.76	-
4	2.074	0.25	33.19	-	33.44	-	56.00	46.00	-22.56	-
5	10.246	0.55	36.73	-	37.28	-	60.00	50.00	-22.72	-
6	20.258	0.99	42.25	-	43.24	-	60.00	50.00	-16.76	-

- 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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts)}$$

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Jan. 07, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 29, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 22, 2006
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170242	Jan. 23, 2006
Preamplifier Agilent	8447D	2944A10631	Nov. 17, 2005
Preamplifier Agilent	8449B	3008A01960	Nov. 14, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219272/4	Jan. 26, 2006
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219275/4	Jan. 26, 2006
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA
Turn Table ADT.	TT100.	TT93021704	NA
Turn Table Controller ADT.	SC100.	SC93021704	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 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC4924-4.

4.2.4 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 chamber. 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

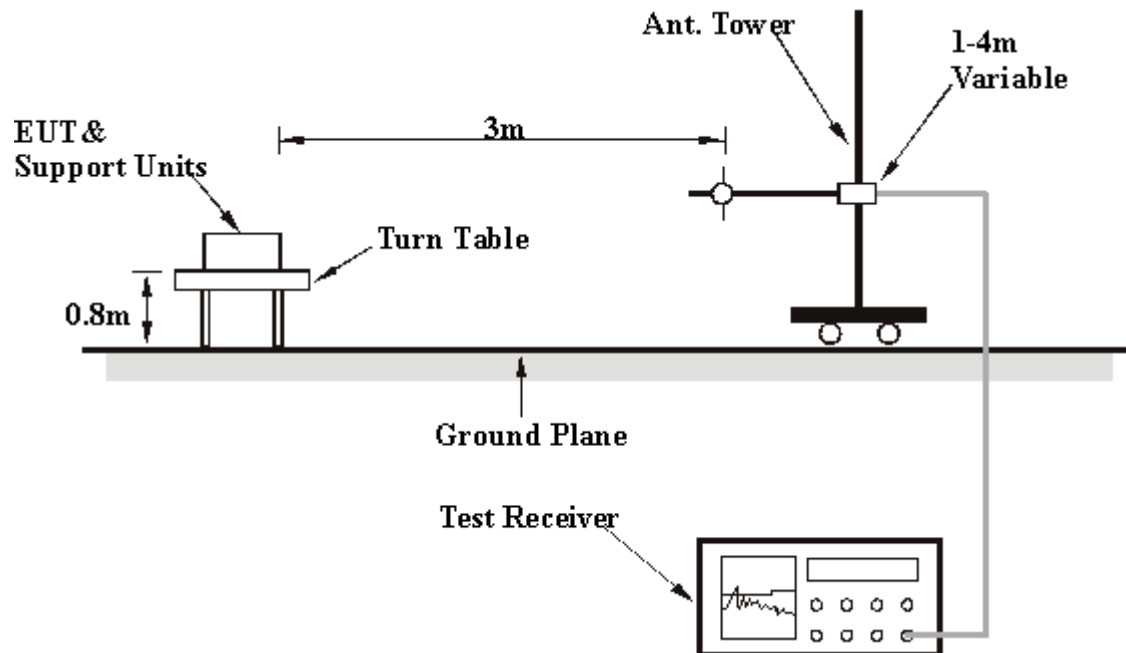
NOTE:

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

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS ANTENNA SAA05-22063A (BELOW 1GHz TEST)

Below 1GHz Worst-Case Data (Power from POE)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A1	TESTED BY	Brad Wu

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	199.12	34.51 QP	43.50	-8.99	1.00 H	250	23.17	11.34
2	232.16	36.54 QP	46.00	-9.46	1.00 H	109	24.06	12.48
3	399.34	40.63 QP	46.00	-5.37	1.00 H	97	23.91	16.71
4	667.60	43.97 QP	46.00	-2.03	2.00 H	175	22.31	21.66
5	799.78	36.86 QP	46.00	-9.14	1.00 H	232	13.40	23.46
6	933.91	41.16 QP	46.00	-4.84	1.00 H	229	15.99	25.16

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	37.78	38.10 QP	40.00	-1.90	1.00 V	145	23.14	14.96
2	199.12	35.55 QP	43.50	-7.95	1.50 V	289	24.21	11.34
3	399.34	38.05 QP	46.00	-7.95	1.00 V	232	21.34	16.71
4	533.47	40.86 QP	46.00	-5.14	1.00 V	211	21.69	19.17
5	667.60	44.46 QP	46.00	-1.54	2.00 V	193	22.80	21.66
6	933.91	39.73 QP	46.00	-6.27	1.00 V	115	14.57	25.16

- 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 (Power from AC adapter_57-12-1500)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B1	TESTED BY	Brad Wu

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	232.16	37.23 QP	46.00	-8.77	1.00 H	247	24.75	12.48
2	300.20	38.38 QP	46.00	-7.62	1.25 H	124	23.96	14.41
3	399.34	37.04 QP	46.00	-8.96	1.00 H	205	20.32	16.71
4	667.60	44.76 QP	46.00	-1.24	2.00 H	202	23.10	21.66
5	799.78	40.12 QP	46.00	-5.88	1.00 H	250	16.66	23.46
6	933.91	41.35 QP	46.00	-4.65	2.00 H	178	16.19	25.16

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	31.94	38.33 QP	40.00	-1.67	2.00 V	205	24.32	14.01
2	160.24	34.32 QP	43.50	-9.18	1.00 V	16	19.40	14.92
3	199.12	35.92 QP	43.50	-7.58	1.00 V	208	24.57	11.34
4	399.34	41.47 QP	46.00	-4.53	1.25 V	247	24.76	16.71
5	667.60	44.48 QP	46.00	-1.52	1.00 V	205	22.82	21.66
6	933.91	39.99 QP	46.00	-6.01	1.50 V	196	14.83	25.16

- 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 (Power from AC adapter_VE20-120)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C1	TESTED BY	Brad Wu

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	199.12	34.23 QP	43.50	-9.27	1.00 H	238	22.88	11.34
2	232.16	36.65 QP	46.00	-9.35	1.00 H	94	24.18	12.48
3	399.34	40.48 QP	46.00	-5.52	1.50 H	88	23.77	16.71
4	667.60	43.20 QP	46.00	-2.80	1.00 H	151	21.54	21.66
5	799.78	36.66 QP	46.00	-9.34	1.00 H	232	13.20	23.46
6	933.91	41.43 QP	46.00	-4.57	1.50 H	220	16.27	25.16

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	31.94	37.55 QP	40.00	-2.45	1.00 V	139	23.54	14.01
2	199.12	36.04 QP	43.50	-7.46	2.00 V	217	24.70	11.34
3	399.34	37.93 QP	46.00	-8.07	1.00 V	181	21.22	16.71
4	533.47	40.89 QP	46.00	-5.11	1.00 V	157	21.72	19.17
5	667.60	44.45 QP	46.00	-1.55	1.50 V	148	22.79	21.66
6	933.91	40.12 QP	46.00	-5.88	1.00 V	64	14.96	25.16

- 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

4.2.9 TEST RESULTS_ANTENNA SDW0939A1 (BELOW 1GHz TEST)

Below 1GHz Worst-Case Data (Power from POE)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A2	TESTED BY	Brad Wu

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	199.12	35.01 QP	43.50	-8.49	1.50 H	226	23.66	11.34
2	232.16	36.59 QP	46.00	-9.41	1.00 H	82	24.12	12.48
3	399.34	40.38 QP	46.00	-5.62	1.00 H	82	23.67	16.71
4	667.60	43.18 QP	46.00	-2.82	1.00 H	145	21.52	21.66
5	799.78	36.55 QP	46.00	-9.45	1.00 H	217	13.09	23.46
6	933.91	40.59 QP	46.00	-5.41	2.00 H	94	15.42	25.16

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	37.78	38.43 QP	40.00	-1.57	1.00 V	136	23.47	14.96
2	199.12	36.69 QP	43.50	-6.81	1.50 V	262	25.35	11.34
3	399.34	38.13 QP	46.00	-7.87	1.00 V	232	21.42	16.71
4	533.47	41.32 QP	46.00	-4.68	1.00 V	205	22.15	19.17
5	667.60	44.10 QP	46.00	-1.90	1.25 V	196	22.44	21.66
6	933.91	39.88 QP	46.00	-6.12	1.00 V	112	14.71	25.16

- 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 (Power from AC adapter_57-12-1500)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B2	TESTED BY	Brad Wu

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	300.20	35.73 QP	46.00	-10.27	1.00 H	133	21.32	14.41
2	399.34	38.60 QP	46.00	-7.40	1.00 H	202	21.88	16.71
3	533.47	36.09 QP	46.00	-9.91	1.00 H	328	16.92	19.17
4	667.60	44.13 QP	46.00	-1.87	2.00 H	205	22.47	21.66
5	799.78	39.24 QP	46.00	-6.76	1.00 H	154	15.78	23.46
6	933.91	40.02 QP	46.00	-5.98	2.00 H	211	14.86	25.16

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	31.94	38.31 QP	40.00	-1.69	1.00 V	271	24.30	14.01
2	70.82	33.76 QP	40.00	-6.24	1.00 V	73	21.50	12.27
3	189.40	37.18 QP	43.50	-6.32	2.00 V	58	25.04	12.13
4	399.34	41.86 QP	46.00	-4.14	1.50 V	256	25.15	16.71
5	667.60	44.88 QP	46.00	-1.12	1.50 V	235	23.22	21.66
6	933.91	39.74 QP	46.00	-6.26	1.00 V	229	14.58	25.16

- 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 (Power from AC adapter_VE20-120)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C2	TESTED BY	Brad Wu

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	199.12	34.39 QP	43.50	-9.11	1.00 H	226	23.05	11.34
2	232.16	36.48 QP	46.00	-9.52	1.00 H	100	24.00	12.48
3	399.34	40.28 QP	46.00	-5.72	1.50 H	97	23.56	16.71
4	667.60	43.28 QP	46.00	-2.72	1.00 H	154	21.62	21.66
5	799.78	36.48 QP	46.00	-9.52	1.00 H	244	13.02	23.46
6	933.91	41.04 QP	46.00	-4.96	1.25 H	223	15.88	25.16

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	31.94	37.25 QP	40.00	-2.75	1.00 V	256	23.24	14.01
2	166.07	35.49 QP	43.50	-8.01	1.50 V	154	21.17	14.32
3	199.12	35.60 QP	43.50	-7.90	1.00 V	280	24.26	11.34
4	533.47	41.05 QP	46.00	-4.95	1.00 V	205	21.89	19.17
5	667.60	44.30 QP	46.00	-1.70	1.00 V	196	22.64	21.66
6	933.91	39.97 QP	46.00	-6.03	2.00 V	118	14.81	25.16

- 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

4.2.10 TEST RESULTS_ANTENNA SAA05-22056A (BELOW 1GHz TEST)

Below 1GHz Worst-Case Data (Power from POE)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A3	TESTED BY	Brad Wu

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	37.78	30.89 QP	40.00	-9.11	1.50 H	190	15.93	14.96
2	199.12	34.84 QP	43.50	-8.66	1.00 H	235	23.50	11.34
3	232.16	37.26 QP	46.00	-8.74	1.25 H	115	24.78	12.48
4	399.34	39.94 QP	46.00	-6.06	1.00 H	97	23.23	16.71
5	667.60	44.62 QP	46.00	-1.38	2.00 H	184	22.96	21.66
6	933.91	40.83 QP	46.00	-5.17	1.00 H	106	15.67	25.16

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	37.78	37.87 QP	40.00	-2.13	1.00 V	136	22.91	14.96
2	199.12	36.04 QP	43.50	-7.46	1.50 V	298	24.70	11.34
3	399.34	38.83 QP	46.00	-7.17	1.00 V	232	22.11	16.71
4	533.47	41.14 QP	46.00	-4.86	1.00 V	211	21.98	19.17
5	667.60	44.30 QP	46.00	-1.70	1.00 V	202	22.64	21.66
6	933.91	40.15 QP	46.00	-5.85	2.00 V	118	14.98	25.16

- 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 (Power from AC adapter_57-12-1500)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B3	TESTED BY	Brad Wu

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	300.20	36.85 QP	46.00	-9.15	1.50 H	127	22.44	14.41
2	399.34	38.31 QP	46.00	-7.69	1.00 H	205	21.59	16.71
3	533.47	41.64 QP	46.00	-4.36	2.00 H	337	22.48	19.17
4	667.60	44.66 QP	46.00	-1.34	2.00 H	190	23.00	21.66
5	799.78	41.73 QP	46.00	-4.27	1.00 H	139	18.27	23.46
6	933.91	40.29 QP	46.00	-5.71	2.00 H	196	15.13	25.16

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	31.94	38.52 QP	40.00	-1.48	1.25 V	229	24.51	14.01
2	199.12	35.71 QP	43.50	-7.79	1.00 V	334	24.37	11.34
3	399.34	41.32 QP	46.00	-4.68	1.00 V	250	24.61	16.71
4	533.47	44.60 QP	46.00	-1.40	1.50 V	214	25.43	19.17
5	667.60	44.33 QP	46.00	-1.67	1.50 V	271	22.67	21.66
6	933.91	38.00 QP	46.00	-8.00	1.00 V	97	12.84	25.16

- 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 (Power from AC adapter_VE20-120)

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	Brad Wu

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	179.68	38.65 QP	43.50	-4.85	1.50 H	235	25.71	12.93
2	232.16	36.99 QP	46.00	-9.01	1.00 H	106	24.51	12.48
3	399.34	40.81 QP	46.00	-5.19	1.00 H	94	24.10	16.71
4	533.47	38.87 QP	46.00	-7.13	2.00 H	283	19.71	19.17
5	667.60	44.81 QP	46.00	-1.19	2.00 H	193	23.15	21.66
6	933.91	40.95 QP	46.00	-5.05	2.00 H	208	15.79	25.16

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	37.78	38.35 QP	40.00	-1.65	1.00 V	280	23.39	14.96
2	199.12	35.78 QP	43.50	-7.72	2.00 V	343	24.43	11.34
3	399.34	38.48 QP	46.00	-7.52	1.00 V	310	21.77	16.71
4	533.47	40.96 QP	46.00	-5.04	1.00 V	274	21.80	19.17
5	667.60	44.71 QP	46.00	-1.29	1.50 V	268	23.05	21.66
6	933.91	40.20 QP	46.00	-5.80	1.00 V	184	15.04	25.16

- 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

4.2.11 TEST RESULTS_ANTENNA SAA05-22063A (ABOVE 1GHz TEST)

802.11a OFDM modulation

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C1	TESTED BY	Brad Wu

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	#1066.00	43.54 PK	74.00	-30.46	1.20 H	51	15.99	27.55
2	2133.00	45.38 PK	68.30	-22.92	1.03 H	167	14.53	30.85
3	#5150.00	48.04 PK	74.00	-25.96	1.49 H	271	9.44	38.60
4	*5180.00	95.24 PK			1.49 H	271	56.58	38.66
4	*5180.00	84.29 AV			1.49 H	271	45.63	38.66
5	10360.00	59.81 PK	68.30	-8.49	1.02 H	64	10.39	49.42

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	#1066.00	44.51 PK	74.00	-29.49	1.28 V	57	16.96	27.55
2	2133.00	48.57 PK	68.30	-19.73	1.36 V	95	17.72	30.85
3	#5150.00	60.90 PK	74.00	-60.16	1.00 V	50	22.30	38.60
3	#5150.00	50.21 AV	54.00	-3.79	1.00 V	50	11.61	38.60
4	*5180.00	108.10 PK			1.00 V	50	69.44	38.66
4	*5180.00	97.41 AV			1.00 V	50	58.75	38.66
5	10360.00	60.57 PK	68.30	-7.73	1.04 V	229	11.15	49.42

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 4	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C1	TESTED BY	Brad Wu

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	#1066.00	44.07 PK	74.00	-29.93	1.11 H	59	16.52	27.55
2	2133.00	46.08 PK	68.30	-22.22	1.03 H	294	15.23	30.85
3	*5240.00	98.06 PK			1.48 H	271	59.29	38.77
3	*5240.00	87.13 AV			1.48 H	271	48.36	38.77
4	10480.00	59.38 PK	68.30	-8.92	1.01 H	55	9.66	49.72

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	#1066.00	46.28 PK	74.00	-27.72	1.20 V	325	18.73	27.55
2	2133.00	48.36 PK	68.30	-19.94	1.01 V	57	17.51	30.85
3	*5240.00	110.86 PK			1.05 V	52	72.09	38.77
3	*5240.00	100.73 AV			1.05 V	52	61.96	38.77
4	10480.00	60.57 PK	68.30	-7.73	1.09 V	27	10.85	49.72

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C1	TESTED BY	Brad Wu

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	#1066.00	44.87 PK	74.00	-29.13	1.01 H	329	17.32	27.55
2	2133.00	46.27 PK	68.30	-22.03	1.05 H	304	15.42	30.85
3	*5260.00	98.17 PK			1.47 H	273	59.35	38.82
3	*5260.00	87.26 AV			1.47 H	273	48.44	38.82
4	10520.00	59.28 PK	68.30	-9.02	1.02 H	75	9.49	49.79

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	#1066.00	46.69 PK	74.00	-27.31	1.18 V	338	19.14	27.55
2	2133.00	48.51 PK	68.30	-19.79	1.06 V	117	17.66	30.85
3	*5260.00	110.92 PK			1.06 V	57	72.10	38.82
3	*5260.00	100.87 AV			1.06 V	57	62.05	38.82
4	10520.00	60.28 PK	68.30	-8.02	1.03 V	224	10.49	49.79

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 8	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C1	TESTED BY	Brad Wu

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	#1066.00	43.82 PK	74.00	-30.18	1.15 H	67	16.27	27.55
2	2133.00	45.66 PK	68.30	-22.64	1.01 H	213	14.81	30.85
3	*5320.00	98.17 PK			1.50 H	268	59.24	38.93
3	*5320.00	87.21 AV			1.50 H	268	48.28	38.93
4	#5350.00	49.09 PK	74.00	-24.91	1.50 H	268	10.12	38.98
5	#10640.00	59.28 PK	74.00	-14.72	1.04 H	78	9.38	49.90
5	#10640.00	46.35 AV	54.00	-7.65	1.04 H	78	-3.55	49.90

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	#1066.00	46.62 PK	74.00	-27.38	1.01 V	276	19.07	27.55
2	2133.00	48.51 PK	68.30	-19.79	1.22 V	23	17.66	30.85
3	*5320.00	111.04 PK			1.07 V	50	72.11	38.93
3	*5320.00	100.95 AV			1.07 V	50	62.02	38.93
4	#5350.00	61.96 PK	74.00	-12.04	1.07 V	50	22.98	38.98
4	#5350.00	51.87 AV	54.00	-2.13	1.07 V	50	12.89	38.98
5	#10640.00	60.32 PK	74.00	-13.68	1.00 V	327	10.42	49.90
5	#10640.00	47.29 AV	54.00	-6.71	1.00 V	327	-2.61	49.90

- NOTE:**
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. “*” : Fundamental frequency
 6. “#” The radiated frequency falling in the restricted band.

4.2.12 TEST RESULTS_ANTENNA SDW0939A1 (ABOVE 1GHz TEST)

802.11a OFDM modulation

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C2	TESTED BY	Brad Wu

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	#1066.00	42.27 PK	74.00	-31.73	1.49 H	187	14.72	27.55
1	#1066.00	37.11 AV	54.00	-16.89	1.49 H	187	9.56	27.55
2	2133.00	45.61 PK	68.30	-22.69	1.03 H	156	14.76	30.85
3	#5150.00	47.81 PK	74.00	-26.19	1.04 H	146	9.21	38.60
4	*5180.00	93.94 PK			1.04 H	146	55.28	38.66
4	*5180.00	83.82 AV			1.04 H	146	45.16	38.66
5	10360.00	58.23 PK	68.30	-10.07	1.03 H	155	8.81	49.42

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	#1066.00	43.19 PK	74.00	-30.81	1.67 V	64	15.64	27.55
1	#1066.00	37.39 AV	54.00	-16.61	1.67 V	64	9.84	27.55
2	2133.00	47.87 PK	68.30	-20.43	1.53 V	234	17.02	30.85
3	#5150.00	60.66 PK	74.00	-13.34	1.08 V	206	22.05	38.60
3	#5150.00	50.45 AV	54.00	-3.55	1.08 V	206	11.85	38.60
4	*5180.00	106.79 PK			1.08 V	206	68.13	38.66
4	*5180.00	96.58 AV			1.08 V	206	57.92	38.66
5	10360.00	59.48 PK	68.30	-8.82	1.00 V	124	10.06	49.42

- NOTE:**
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. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 4	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C2	TESTED BY	Brad Wu

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	#1066.00	43.31 PK	74.00	-30.69	1.40 H	168	15.76	27.55
2	2133.00	46.75 PK	68.30	-21.55	1.02 H	165	15.90	30.85
3	*5240.00	95.87 PK			1.05 H	151	57.10	38.77
3	*5240.00	83.72 AV			1.05 H	151	44.95	38.77
4	10480.00	58.72 PK	68.30	-9.58	1.00 H	152	9.00	49.72

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	#1066.00	44.23 PK	74.00	-29.77	1.42 V	60	16.68	27.55
2	2133.00	48.27 PK	68.30	-20.03	1.50 V	227	17.42	30.85
3	*5240.00	108.54 PK			1.10 V	202	69.77	38.77
3	*5240.00	98.19 AV			1.10 V	202	59.42	38.77
4	10480.00	59.97 PK	68.30	-8.33	1.03 V	119	10.25	49.72

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C2	TESTED BY	Brad Wu

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	#1066.00	43.52 PK	74.00	-30.48	1.36 H	77	15.97	27.55
2	2133.00	46.93 PK	68.30	-21.37	1.49 H	222	16.08	30.85
3	*5260.00	95.67 PK			1.07 H	148	56.85	38.82
3	*5260.00	83.50 AV			1.07 H	148	44.68	38.82
4	10520.00	58.42 PK	68.30	-9.88	1.00 H	143	8.63	49.79

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	#1066.00	44.52 PK	74.00	-29.48	1.40 V	72	16.97	27.55
2	2133.00	48.67 PK	68.30	-19.63	1.46 V	235	17.82	30.85
3	*5260.00	108.45 PK			1.06 V	204	69.63	38.82
3	*5260.00	98.25 AV			1.06 V	204	59.43	38.82
4	10520.00	59.17 PK	68.30	-9.13	1.01 V	123	9.38	49.79

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 8	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C2	TESTED BY	Brad Wu

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	#1066.00	44.21 PK	74.00	-29.79	1.30 H	65	16.66	27.55
2	2133.00	46.29 PK	68.30	-22.01	1.29 H	254	15.44	30.85
3	*5320.00	95.71 PK			1.06 H	151	56.78	38.93
3	*5320.00	83.69 AV			1.06 H	151	44.76	38.93
4	#5350.00	46.68 PK	74.00	-41.59	1.06 H	151	7.70	38.98
5	#10640.00	58.61 PK	74.00	-15.39	1.03 H	152	8.71	49.90
5	#10640.00	45.88 AV	54.00	-8.12	1.03 H	152	-4.02	49.90

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	#1066.00	45.68 PK	74.00	-28.32	1.43 V	59	18.13	27.55
2	2133.00	48.67 PK	68.30	-19.63	1.37 V	245	17.82	30.85
3	*5320.00	108.76 PK			1.05 V	195	69.83	38.93
3	*5320.00	98.51 AV			1.05 V	195	59.58	38.93
4	#5350.00	59.73 PK	74.00	-14.27	1.05 V	195	20.75	38.98
4	#5350.00	49.48 AV	54.00	-4.52	1.05 V	195	10.50	38.98
5	#10640.00	59.23 PK	74.00	-14.77	1.06 V	134	9.33	49.90
5	#10640.00	47.08 AV	54.00	-6.92	1.06 V	134	-2.82	49.90

- NOTE:**
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. “*” : Fundamental frequency
 6. “#” The radiated frequency falling in the restricted band.

4.2.13 TEST RESULTS_ANTENNA SAA05-22056A (ABOVE 1GHz TEST)

802.11a OFDM modulation

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	Brad Wu

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	#1066.00	43.35 PK	74.00	-30.65	1.22 H	61	15.80	27.55
2	2133.00	45.50 PK	68.30	-22.80	1.04 H	118	14.65	30.85
3	#5150.00	48.97 PK	74.00	-25.03	1.15 H	344	10.37	38.60
4	*5180.00	96.96 PK			1.15 H	344	58.30	38.66
4	*5180.00	86.86 AV			1.15 H	344	48.20	38.66
5	10360.00	59.65 PK	68.30	-8.65	1.00 H	219	10.23	49.42

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	#1066.00	44.29 PK	74.00	-29.71	1.51 V	34	16.74	27.55
2	2133.00	48.65 PK	68.30	-19.65	1.40 V	156	17.80	30.85
3	#5150.00	62.43 PK	74.00	-11.57	1.07 V	3	23.83	38.60
3	#5150.00	51.74 AV	54.00	-2.26	1.07 V	3	13.14	38.60
4	*5180.00	110.42 PK			1.07 V	3	71.76	38.66
4	*5180.00	99.73 AV			1.07 V	3	61.07	38.66
5	10360.00	60.61 PK	68.30	-7.69	1.03 V	217	11.19	49.42

- NOTE:**
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. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 4	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	Brad Wu

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	#1066.00	44.86 PK	74.00	-29.14	1.09 H	110	17.31	27.55
2	2133.00	46.57 PK	68.30	-21.73	1.03 H	219	15.72	30.85
3	*5240.00	98.41 PK			1.16 H	344	59.64	38.77
3	*5240.00	88.02 AV			1.16 H	344	49.25	38.77
4	10480.00	59.72 PK	68.30	-8.58	1.01 H	168	10.00	49.72

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	#1066.00	46.61 PK	74.00	-27.39	1.20 V	38	19.06	27.55
2	2133.00	48.79 PK	68.30	-19.51	1.32 V	215	17.94	30.85
3	*5240.00	112.13 PK			1.00 V	10	73.36	38.77
3	*5240.00	101.85 AV			1.00 V	10	63.08	38.77
4	10480.00	61.82 PK	68.30	-6.48	1.01 V	342	12.10	49.72

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 5	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	Brad Wu

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	#1066.00	44.17 PK	74.00	-29.83	1.00 H	211	16.62	27.55
2	2133.00	46.82 PK	68.30	-21.48	1.01 H	97	15.97	30.85
3	*5260.00	98.76 PK			1.17 H	342	59.94	38.82
3	*5260.00	88.42 AV			1.17 H	342	49.60	38.82
4	10520.00	59.98 PK	68.30	-8.32	1.16 H	25	10.19	49.79

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	#1066.00	46.20 PK	74.00	-27.80	1.14 V	323	18.65	27.55
2	2133.00	48.32 PK	68.30	-19.98	1.01 V	234	17.47	30.85
3	*5260.00	112.41 PK			1.00 V	23	73.59	38.82
3	*5260.00	102.06 AV			1.00 V	23	63.24	38.82
4	10520.00	60.76 PK	68.30	-7.54	1.34 V	260	10.97	49.79

- NOTE:**
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. “*” : Fundamental frequency
 6. “#”The radiated frequency falling in the restricted band.

EUT	AirMagnet SmartEdge Sensor	MEASUREMENT DETAIL	
MODEL	A5020	FREQUENCY RANGE	1 ~ 40 GHz
CHANNEL	Channel 8	DETECTOR FUNCTION	Peak(PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 985hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	C3	TESTED BY	Brad Wu

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	#1066.00	44.57 PK	74.00	-29.43	1.10 H	129	17.02	27.55
2	2133.00	46.83 PK	68.30	-21.47	1.03 H	352	15.98	30.85
3	*5320.00	98.66 PK			1.16 H	343	59.73	38.93
3	*5320.00	88.20 AV			1.16 H	343	49.27	38.93
4	#5350.00	49.11 PK	74.00	-24.89	1.16 H	343	10.13	38.98
5	#10640.00	59.29 PK	74.00	-14.71	1.02 H	157	9.39	49.90
5	#10640.00	46.23 AV	54.00	-7.77	1.02 H	157	-3.67	49.90

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	#1066.00	46.87 PK	74.00	-27.13	1.40 V	72	19.32	27.55
2	2133.00	48.72 PK	68.30	-19.58	1.02 V	214	17.87	30.85
3	*5320.00	112.54 PK			1.03 V	6	73.61	38.93
3	*5320.00	102.22 AV			1.03 V	6	63.29	38.93
4	#5350.00	62.99 PK	74.00	-11.01	1.03 V	6	24.02	38.98
4	#5350.00	52.67 AV	54.00	-1.33	1.03 V	6	13.70	38.98
5	#10640.00	60.53 PK	74.00	-13.47	1.06 V	332	10.63	49.90
5	#10640.00	47.52 AV	54.00	-6.48	1.06 V	332	-2.38	49.90

- NOTE:**
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. “*” : Fundamental frequency
 6. “#” The radiated frequency falling in the restricted band.

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

NOTE:

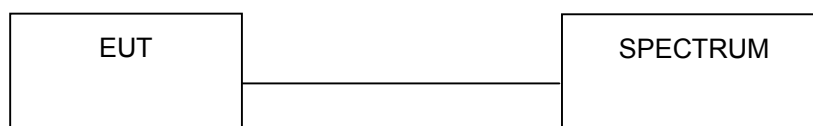
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 3 is used.

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 specific channel frequencies individually.

4.3.7 TEST RESULTS

802.11a OFDM modulation

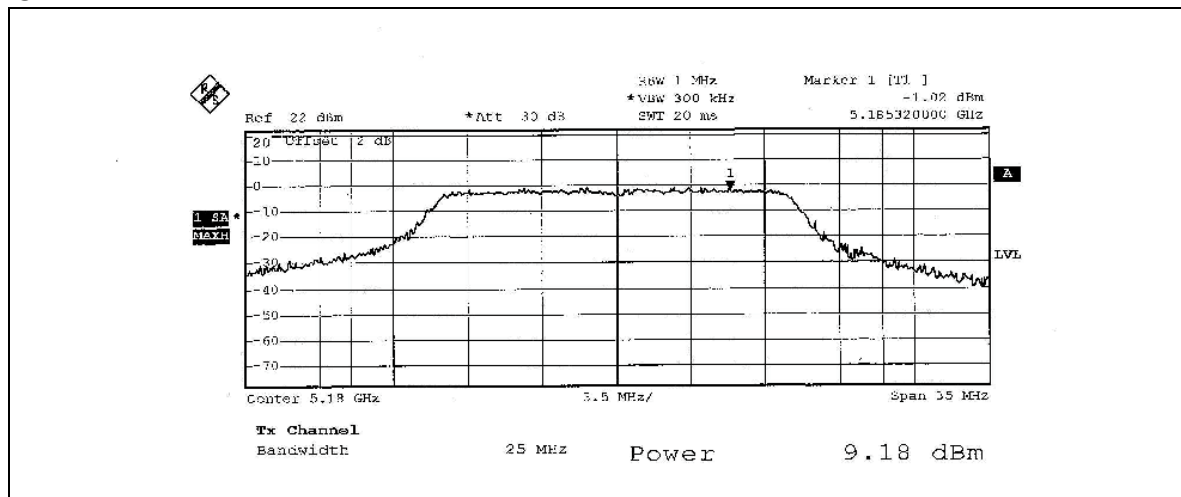
EUT	AirMagnet SmartEdge Sensor	MODEL	A5020
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 60%RH, 985hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	8.279	9.18	15.00	24.56	PASS
4	5240	14.421	11.59	15.00	24.80	PASS
5	5260	13.366	11.26	22.00	24.80	PASS
8	5320	13.152	11.19	22.00	24.80	PASS

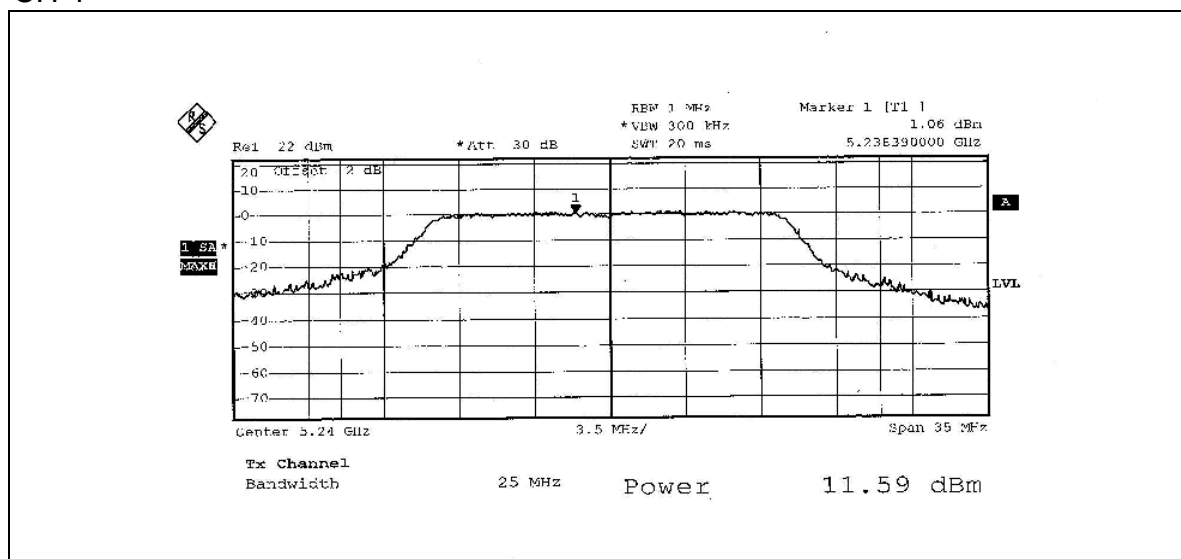
NOTE 1: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

NOTE 2: According to 15.407 (a), the maximum antenna gain 8dBi is higher than 6dBi, so the limit of peak power shall be reduced by 2dB.

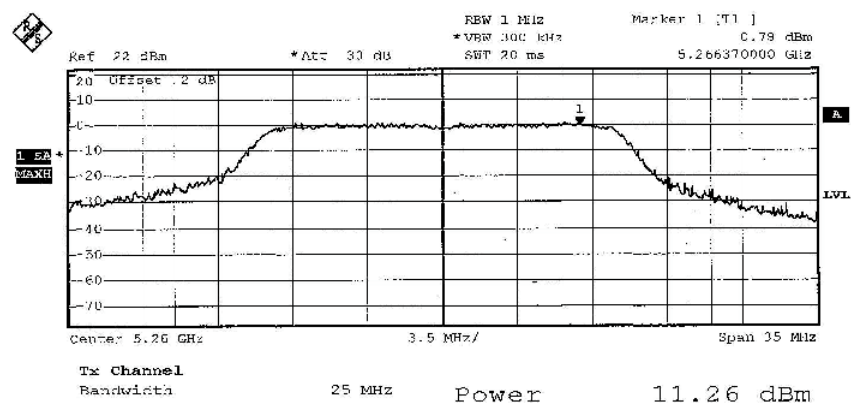
Peak Power Output: CH 1



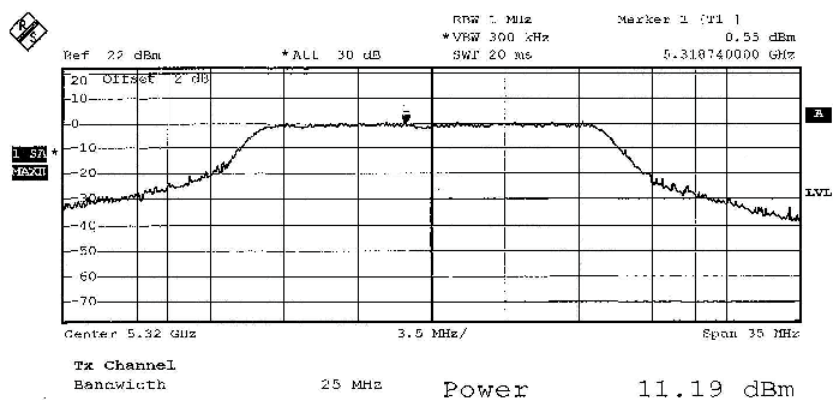
CH 4



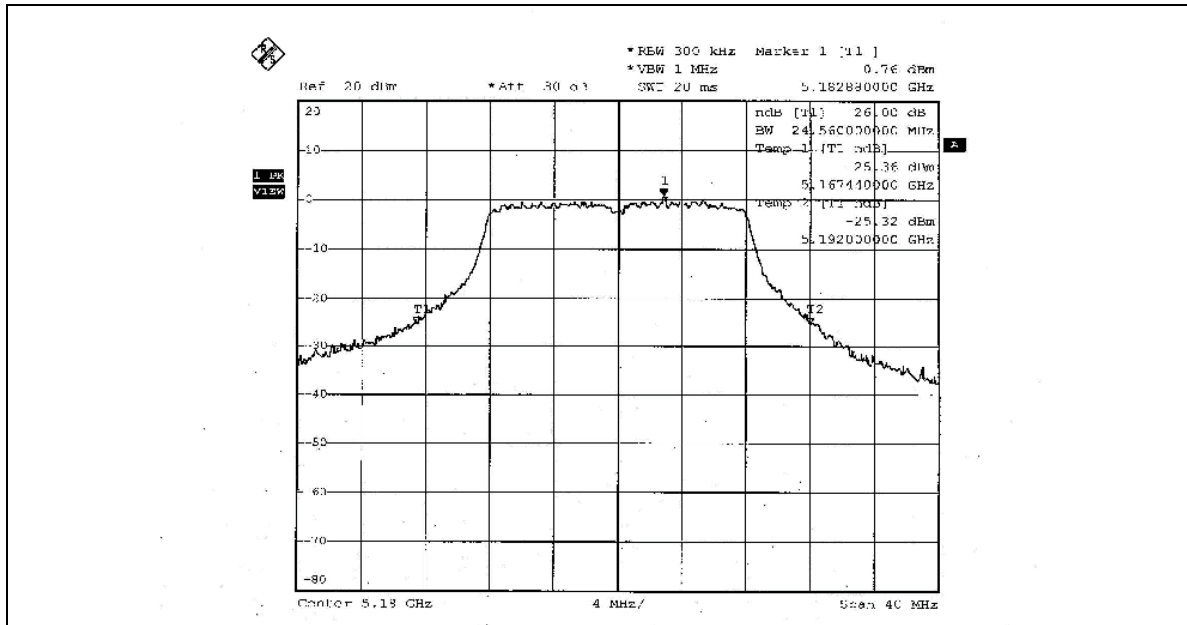
CH 5



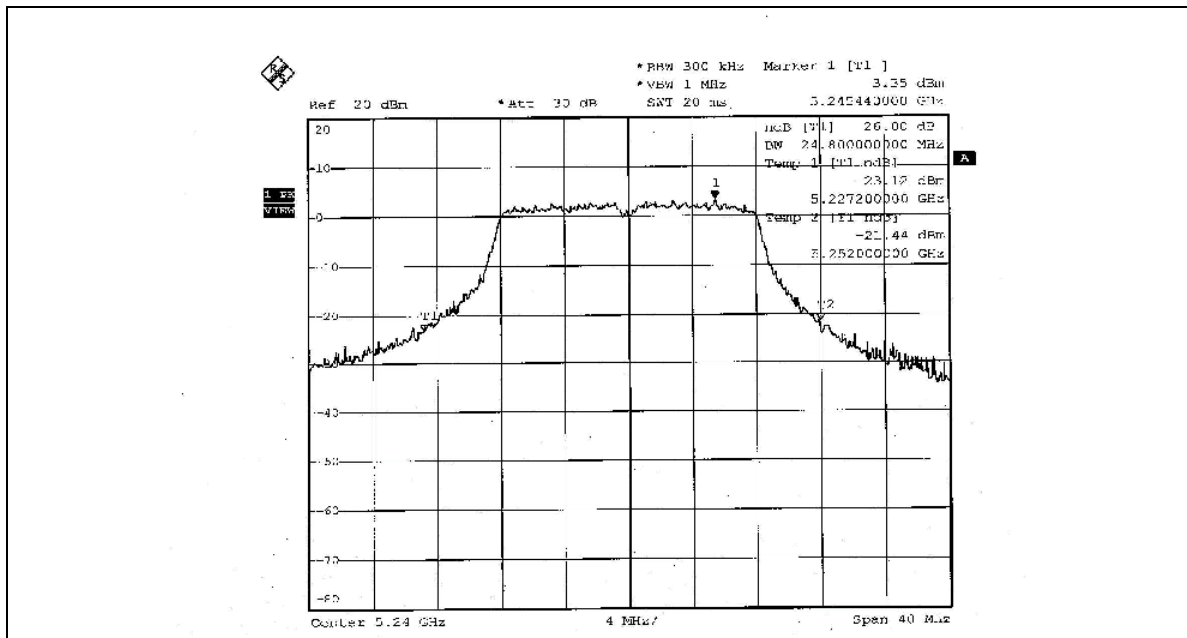
CH 8



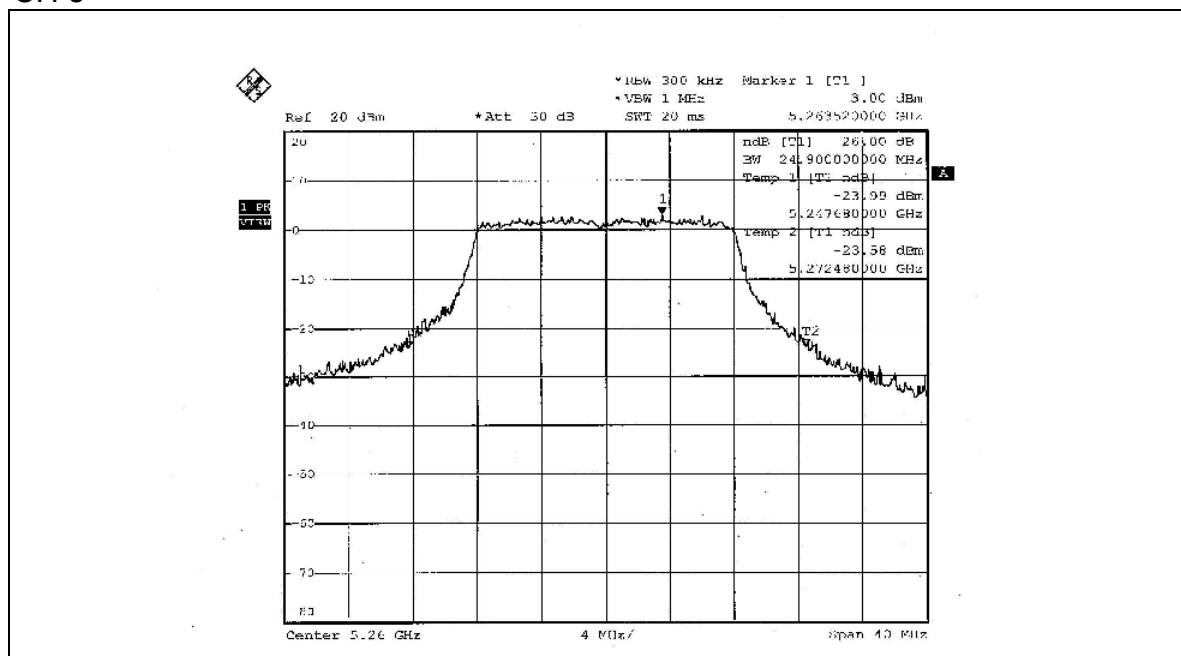
26dB Occupied Bandwidth: CH 1



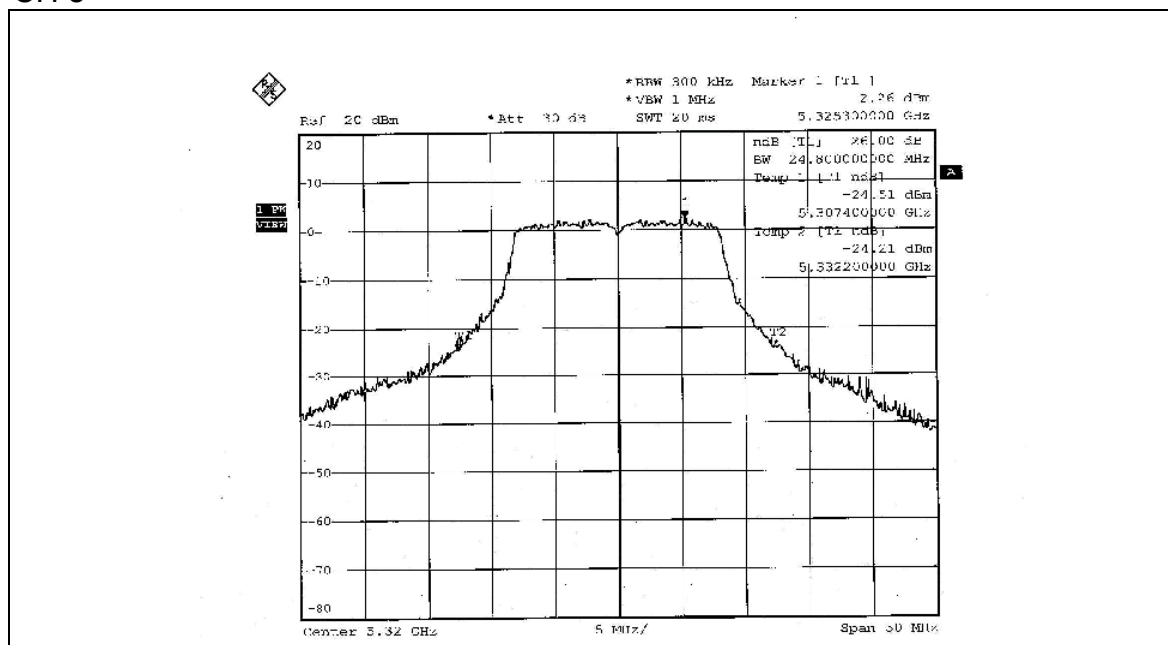
CH 4



CH 5



CH 8



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	13dB
5.25 – 5.35 GHz	13dB
5.725 – 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

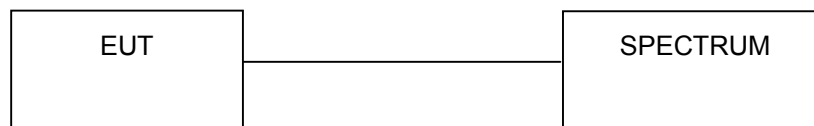
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300kHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

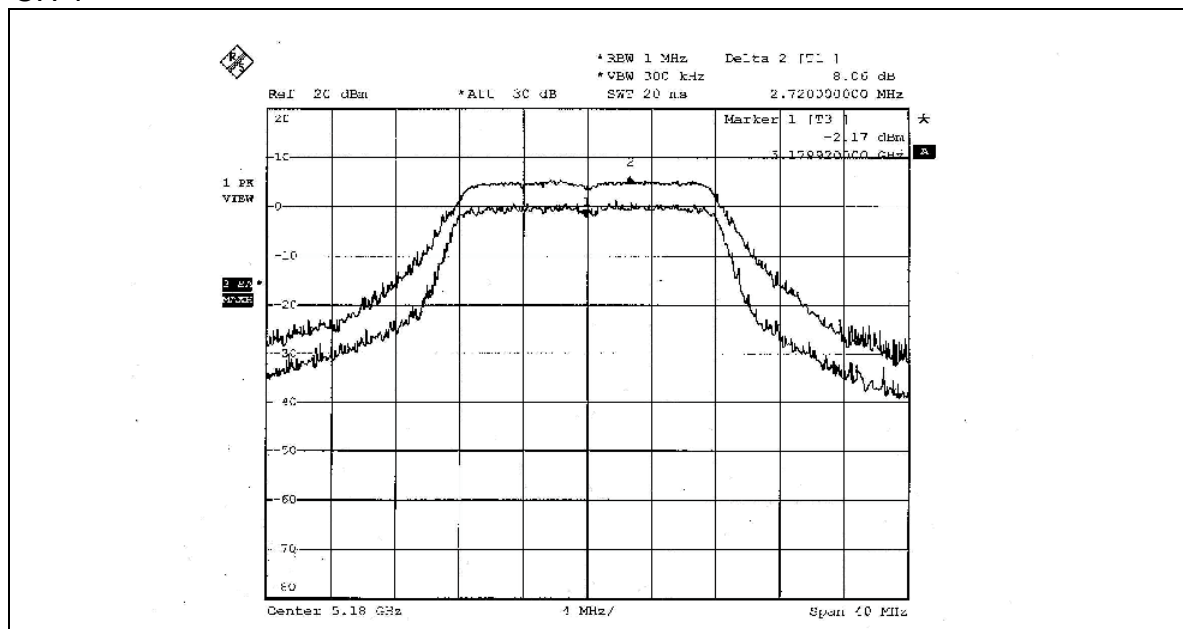
4.4.7 TEST RESULTS

802.11a OFDM modulation

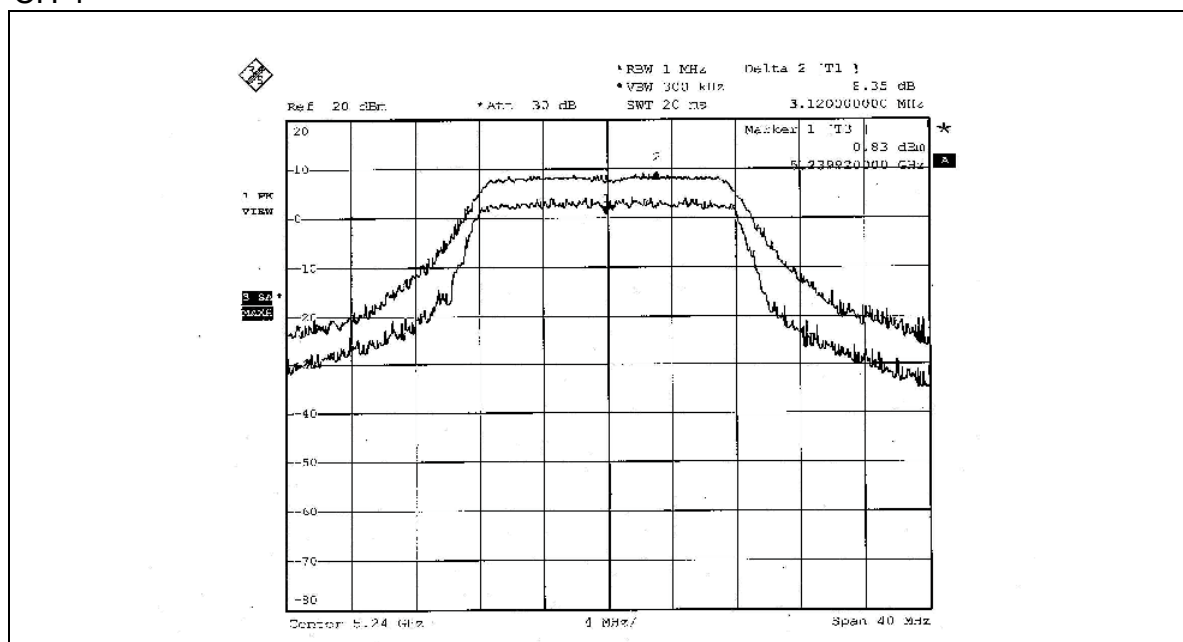
EUT	AirMagnet SmartEdge Sensor	MODEL	A5020
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 60%RH, 985hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.06	13	PASS
4	5240	8.35	13	PASS
5	5260	8.03	13	PASS
8	5320	7.37	13	PASS

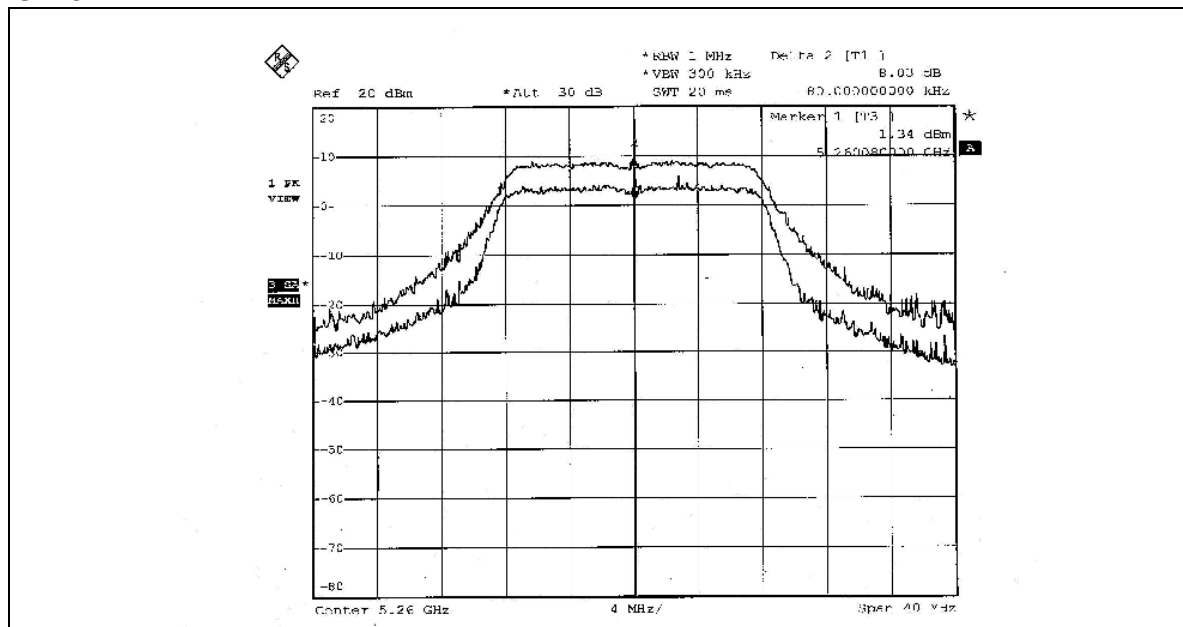
CH 1



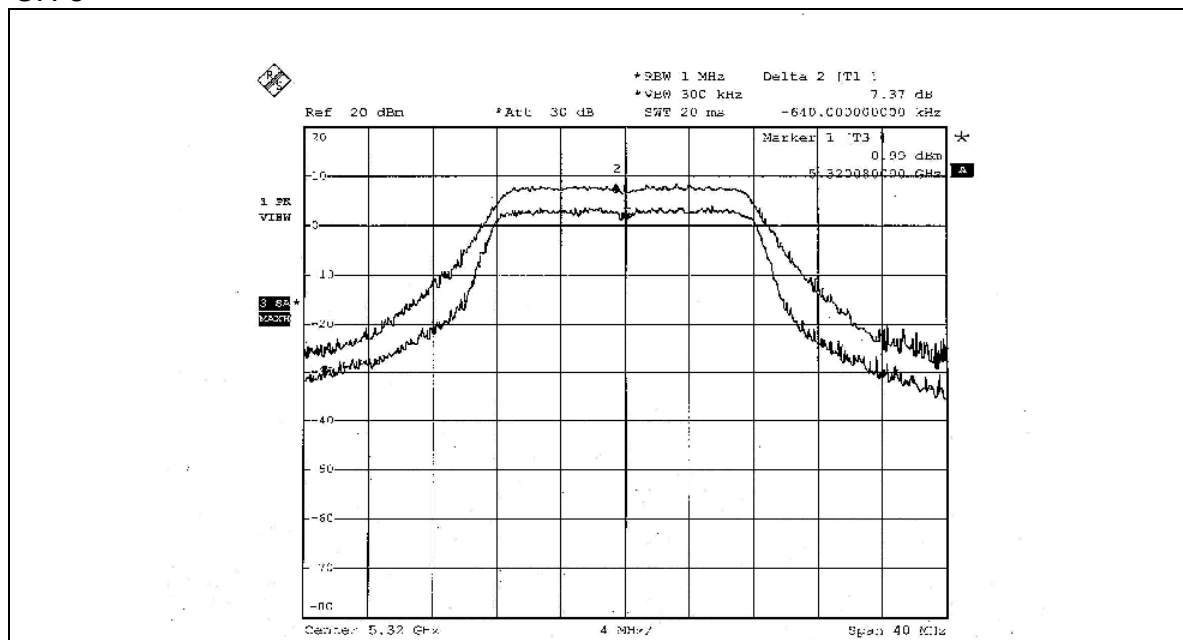
CH 4



CH 5



CH 8



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6

4.5.7 TEST RESULTS

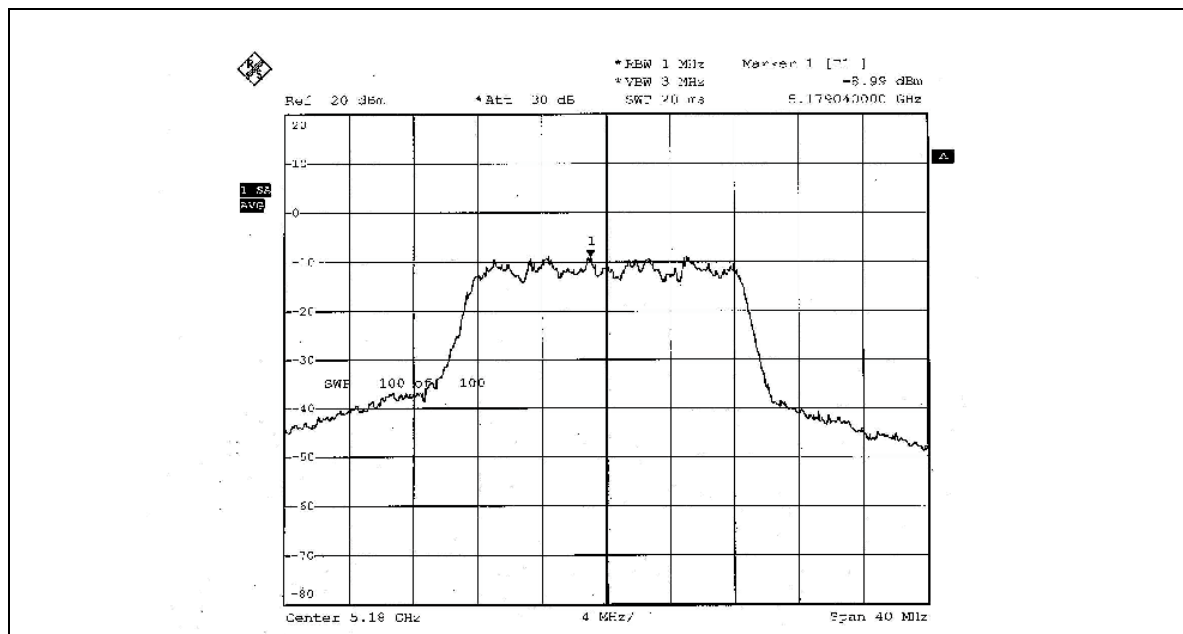
802.11a OFDM modulation

EUT	AirMagnet SmartEdge Sensor	MODEL	A5020
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 60%RH, 985hPa
TESTED BY	Gary Chang		

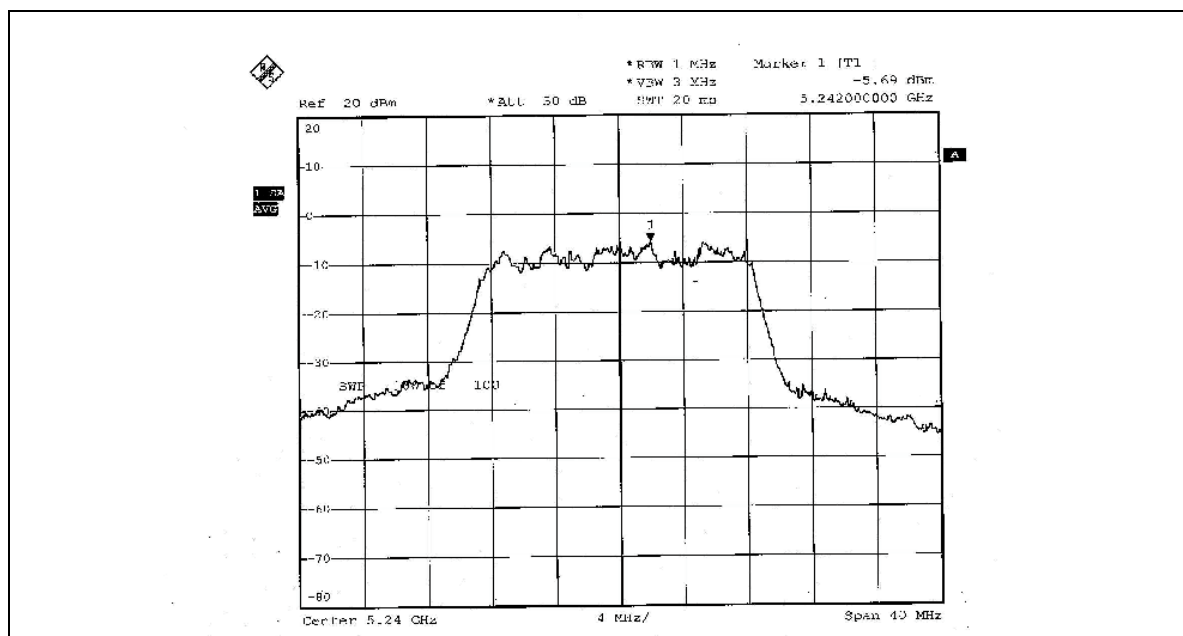
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-8.99	2	PASS
4	5240	-5.69	2	PASS
5	5260	-6.22	9	PASS
8	5320	-6.24	9	PASS

NOTE: According to 15.407 (a), the maximum antenna gain 8dBi is higher than 6dBi, so the limit of peak power shall be reduced by 2dB.

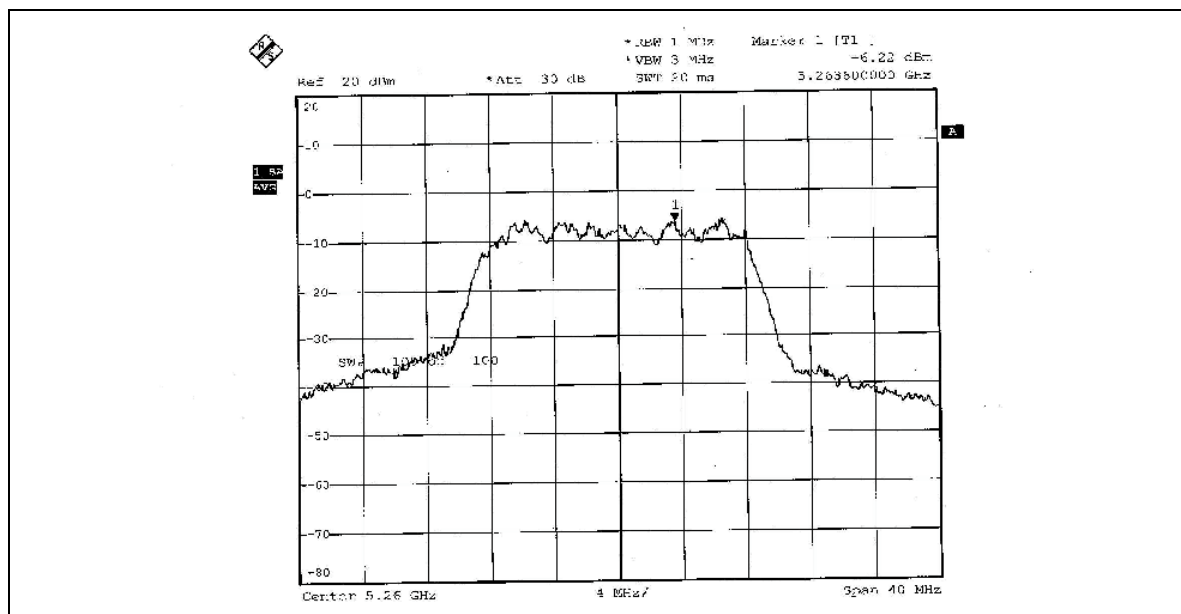
CH 1



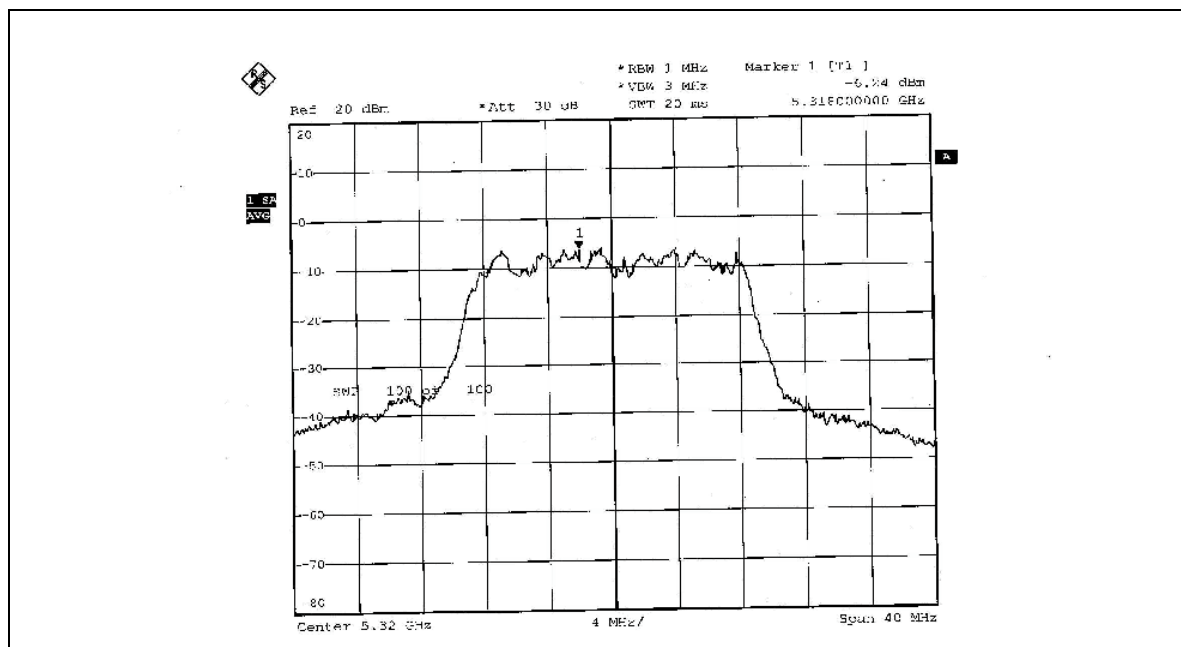
CH 4



CH 5



CH 8



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.02\%$ of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Mar. 09, 2006
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W901030	Jul. 18, 2006

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

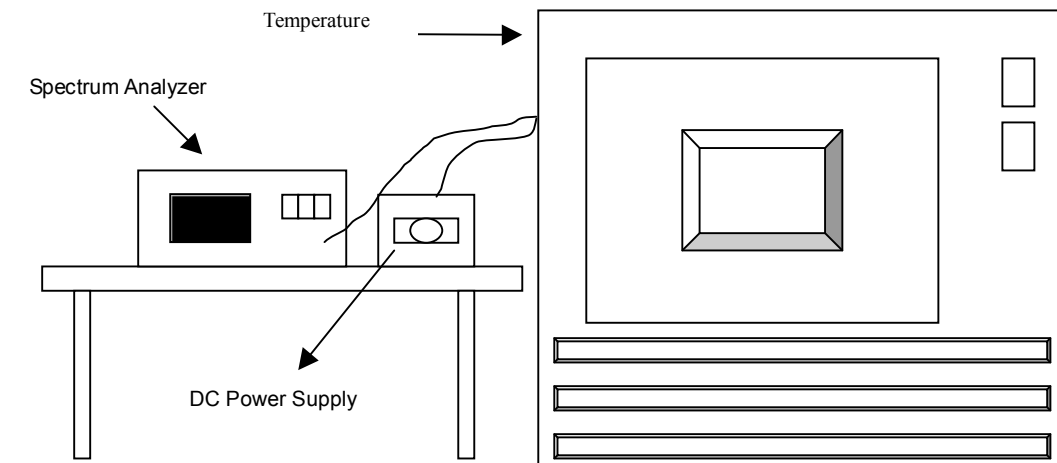
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at $+20$ degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.7 TEST RESULTS

Operating frequency: 5320MHz						Limit : $\pm 0.015\%$			
Temp. (°C)	Power supply (Vac)	0 minute		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	138	5320.0423	0.0007951	5320.0425	0.0007989	5320.0429	0.0008064	5320.0422	0.0007932
	120	5320.0425	0.0007989	5320.0428	0.0008045	5320.0431	0.0008102	5320.0426	0.0008008
	102	5320.0426	0.0008008	5320.0427	0.0008026	5320.0435	0.0008177	5320.0428	0.0008045
40	138	5320.0382	0.0007180	5320.0385	0.0007237	5320.0391	0.0007350	5320.0382	0.0007180
	120	5320.0384	0.0007218	5320.0386	0.0007256	5320.0392	0.0007368	5320.0384	0.0007218
	102	5320.0386	0.0007256	5320.0381	0.0007162	5320.0395	0.0007425	5320.0385	0.0007237
30	138	5320.0275	0.0005169	5320.0276	0.0005188	5320.0282	0.0005301	5320.0285	0.0005357
	120	5320.0282	0.0005301	5320.0281	0.0005282	5320.0286	0.0005376	5320.0286	0.0005376
	102	5320.0286	0.0005376	5320.0283	0.0005320	5320.0285	0.0005357	5320.0288	0.0005414
20	138	5320.0155	0.0002914	5320.0152	0.0002857	5320.0156	0.0002932	5320.0159	0.0002989
	120	5320.0153	0.0002876	5320.0158	0.0002970	5320.0152	0.0002857	5320.0162	0.0003045
	102	5320.0159	0.0002989	5320.0156	0.0002932	5320.0159	0.0002989	5320.0164	0.0003083
10	138	5320.0052	0.0000977	5320.0056	0.0001053	5320.0052	0.0000977	5320.0063	0.0001184
	120	5320.0053	0.0000996	5320.0058	0.0001090	5320.0062	0.0001165	5320.0068	0.0001278
	102	5320.0058	0.0001090	5320.0059	0.0001109	5320.0061	0.0001147	5320.0065	0.0001222
0	138	5319.9885	-0.0002162	5319.9884	-0.0002180	5319.9886	-0.0002143	5319.9885	-0.0002162
	120	5319.9886	-0.0002143	5319.9883	-0.0002199	5319.9889	-0.0002086	5319.9883	-0.0002199
	102	5319.9882	-0.0002218	5319.9881	-0.0002237	5319.9891	-0.0002049	5319.9887	-0.0002124
-10	138	5319.9825	-0.0003289	5319.9826	-0.0003271	5319.9832	-0.0003158	5319.9835	-0.0003102
	120	5319.9826	-0.0003271	5319.9857	-0.0002688	5319.9830	-0.0003195	5319.9836	-0.0003083
	102	5319.9828	-0.0003233	5319.9853	-0.0002763	5319.9837	-0.0003064	5319.9832	-0.0003158
-20	138	5319.9728	-0.0005113	5319.9722	-0.0005226	5319.9725	-0.0005169	5319.9835	-0.0003102
	120	5319.9729	-0.0005094	5319.9725	-0.0005169	5319.9726	-0.0005150	5319.9731	-0.0005056
	102	5319.9725	-0.0005169	5319.9724	-0.0005188	5319.9728	-0.0005113	5319.9732	-0.0005038
-30	138	5319.9655	-0.0006485	5319.9658	-0.0006429	5319.9660	-0.0006391	5319.9658	-0.0006429
	120	5319.9654	-0.0006504	5319.9659	-0.0006410	5319.9662	-0.0006353	5319.9655	-0.0006485
	102	5319.9658	-0.0006429	5319.9652	-0.0006541	5319.9665	-0.0006297	5319.9657	-0.0006447

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.15 to 5.35GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=1kHz) are attached on the following pages.

802.11a OFDM modulation**Antenna: SAA05-22063A****Channel 1 (5180MHz)**

The band edge emission plot on page 73 shows 42.34dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 108.10dBuV/m (Peak), so the maximum field strength in restrict band is $108.10 - 42.34 = 65.76$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 73 shows 47.66dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 97.41dBuV/m (Average), so the maximum field strength in restrict band is $97.41 - 47.66 = 49.75$ dBuV/m which is under 54dBuV/m limit.

Channel 8 (5320MHz)

The band edge emission plot on page 74 shows 43.78dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 111.04dBuV/m (Peak), so the maximum field strength in restrict band is $111.04 - 43.78 = 67.26$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 75 shows 49.70dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 100.95dBuV/m (Average), so the maximum field strength in restrict band is $100.95 - 49.70 = 51.25$ dBuV/m which is under 54dBuV/m limit.

802.11a OFDM modulation**Antenna: SDW0939A1****Channel 1 (5180MHz)**

The band edge emission plot on page 73 shows 42.34dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 106.79dBuV/m (Peak), so the maximum field strength in restrict band is $106.79 - 42.34 = 64.45$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 73 shows 47.66dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 96.58dBuV/m (Average), so the maximum field strength in restrict band is $96.58 - 47.66 = 48.92$ dBuV/m which is under 54dBuV/m limit.

Channel 8 (5320MHz)

The band edge emission plot on page 74 shows 43.78dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 108.76dBuV/m (Peak), so the maximum field strength in restrict band is $108.76 - 43.78 = 64.98$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 75 shows 49.70dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 98.51dBuV/m (Average), so the maximum field strength in restrict band is $98.51 - 49.70 = 48.81$ dBuV/m which is under 54dBuV/m limit.

802.11a OFDM modulation**Antenna: SAA05-22056A****Channel 1 (5180MHz)**

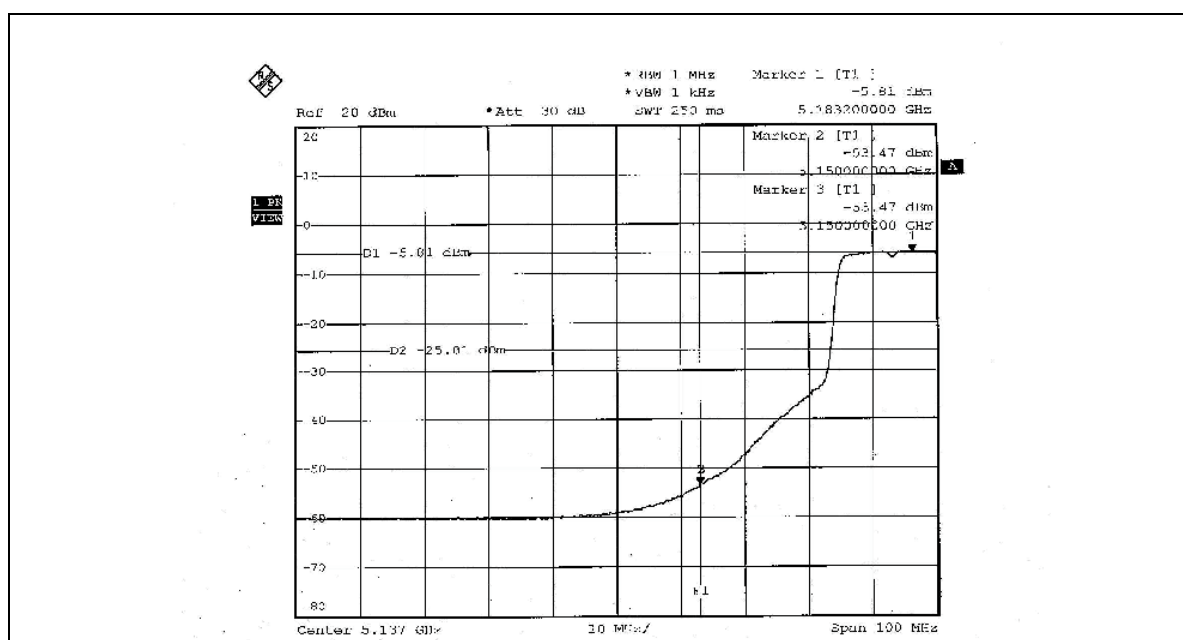
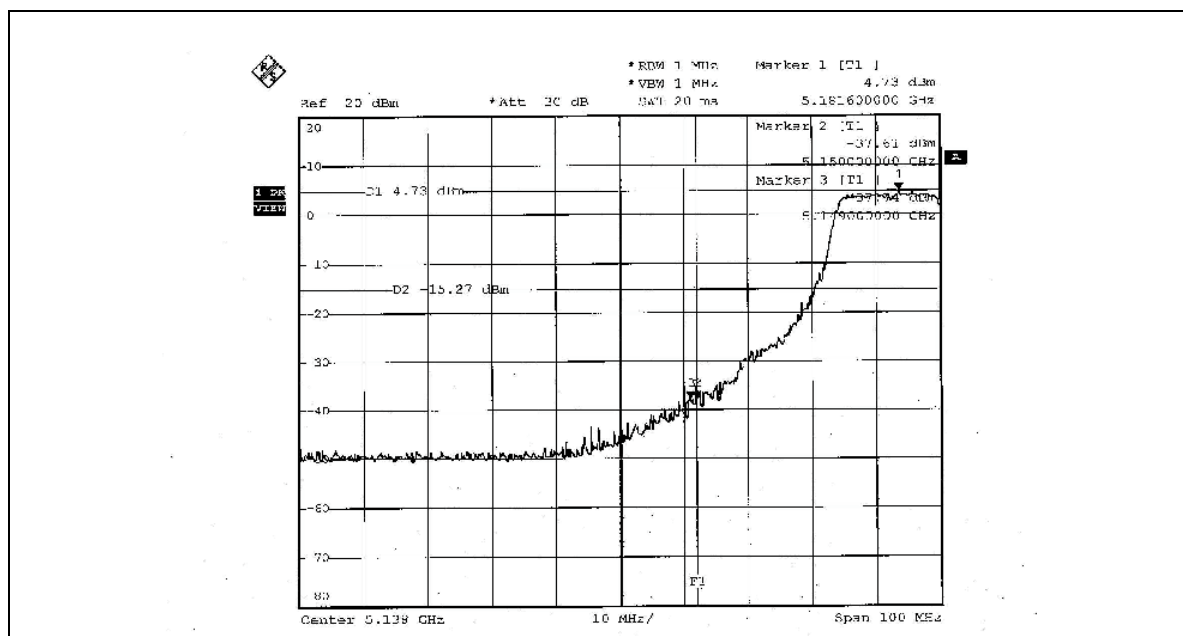
The band edge emission plot on page 73 shows 42.34dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 110.42dBuV/m (Peak), so the maximum field strength in restrict band is $110.42 - 42.34 = 68.08$ dBuV/m which is under 74dBuV/m limit.

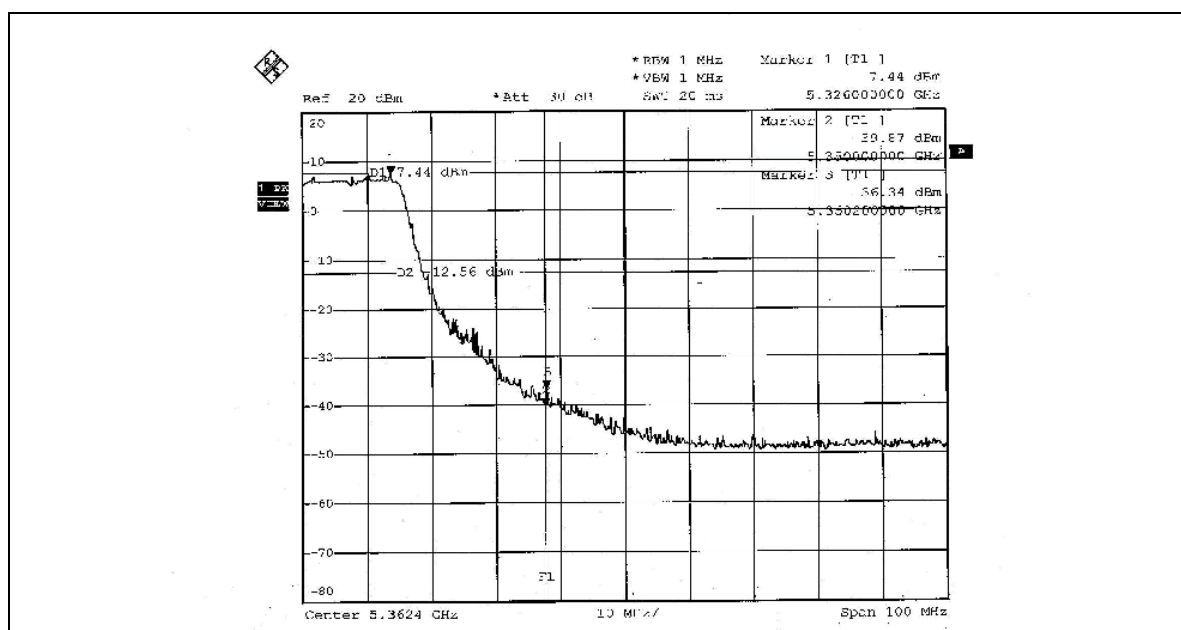
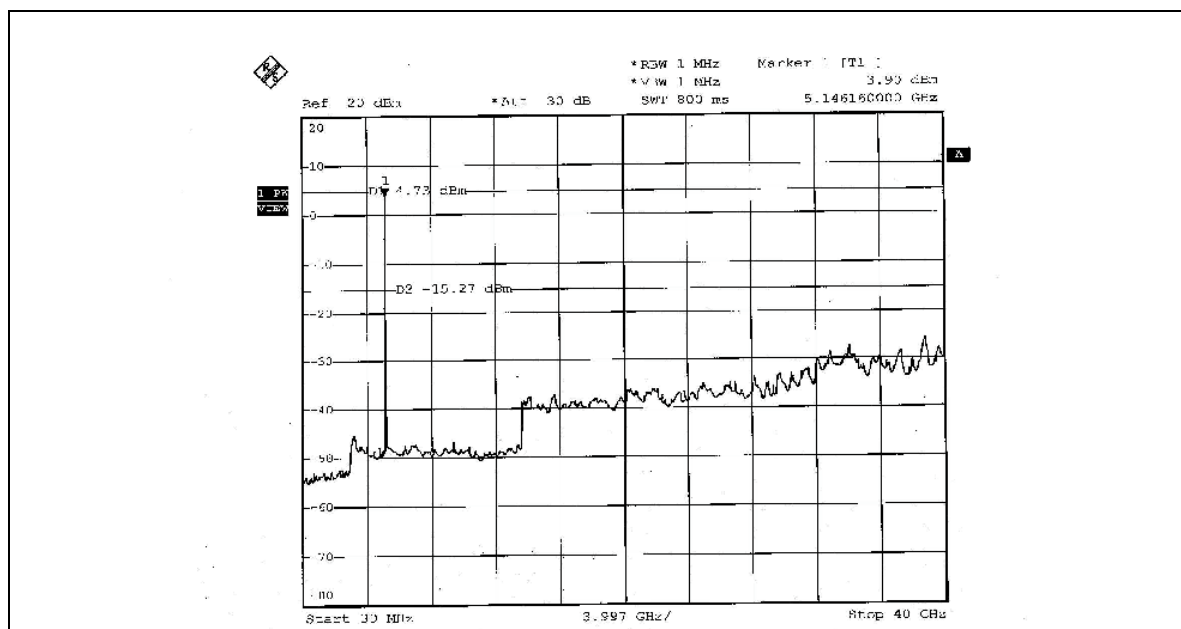
The band edge emission plot on page 73 shows 47.66dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 99.73dBuV/m (Average), so the maximum field strength in restrict band is $99.73 - 47.66 = 52.07$ dBuV/m which is under 54dBuV/m limit.

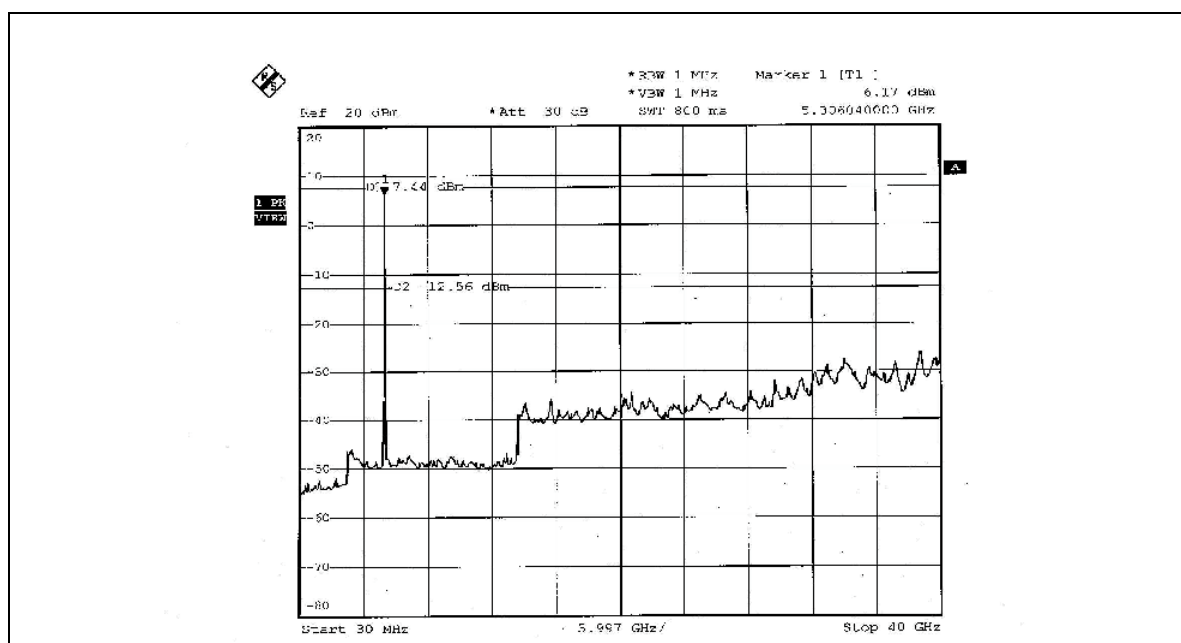
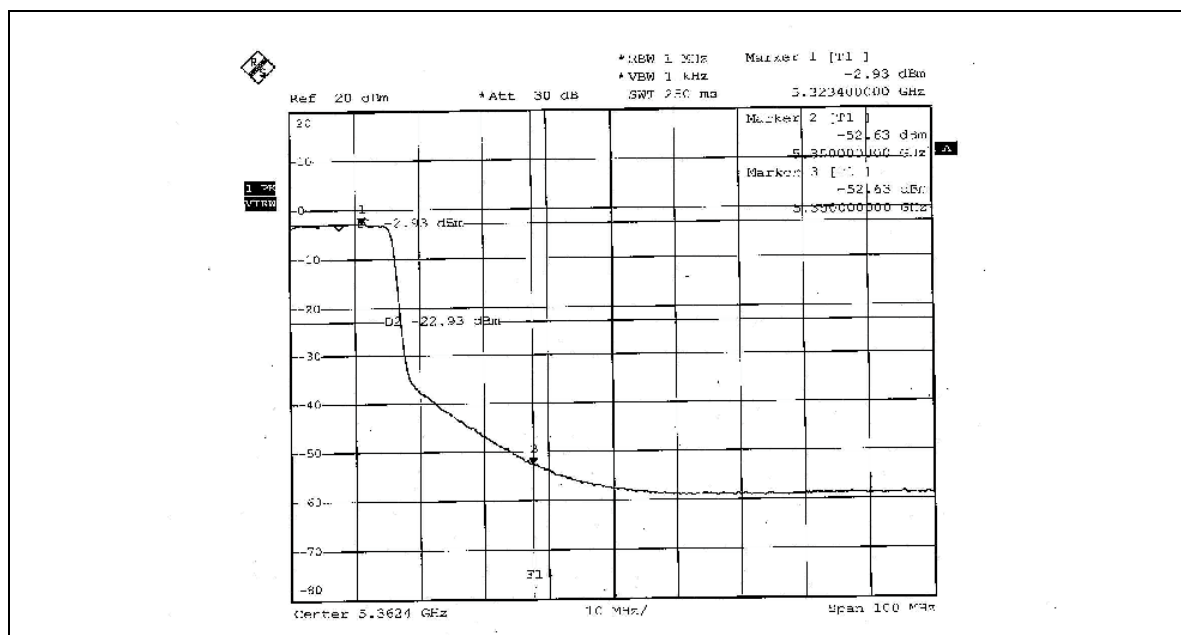
Channel 8 (5320MHz)

The band edge emission plot on page 74 shows 43.78dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 112.54dBuV/m (Peak), so the maximum field strength in restrict band is $112.54 - 43.78 = 68.76$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 75 shows 49.70dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 102.22dBuV/m (Average), so the maximum field strength in restrict band is $102.22 - 49.70 = 52.52$ dBuV/m which is under 54dBuV/m limit.









4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

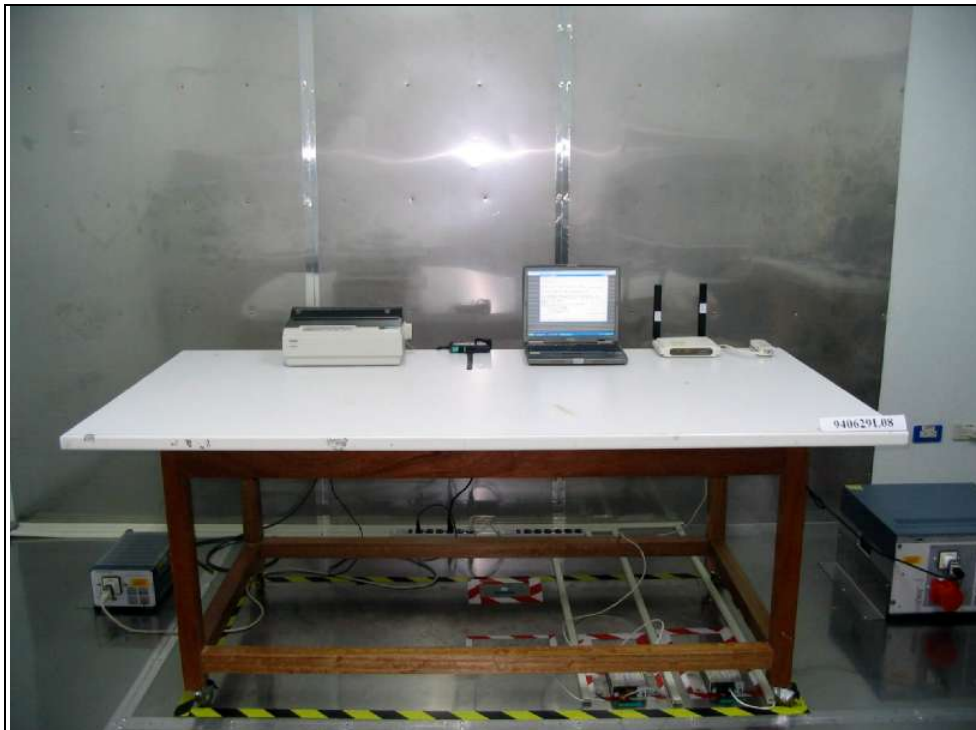
4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used in this product are Omni-Directional and Dipole antenna with RP TNC connector. The maximum Gain of the antenna is 8dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

Test Mode A1



Test Mode A2



Test Mode A3



Test Mode B1



Test Mode B2



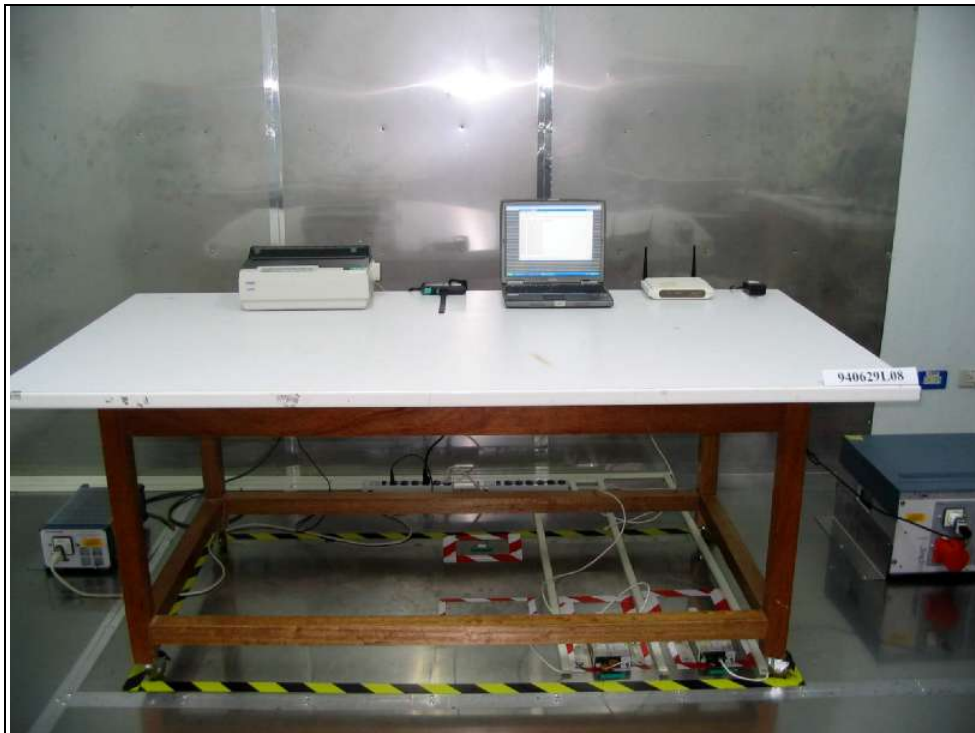
Test Mode B3



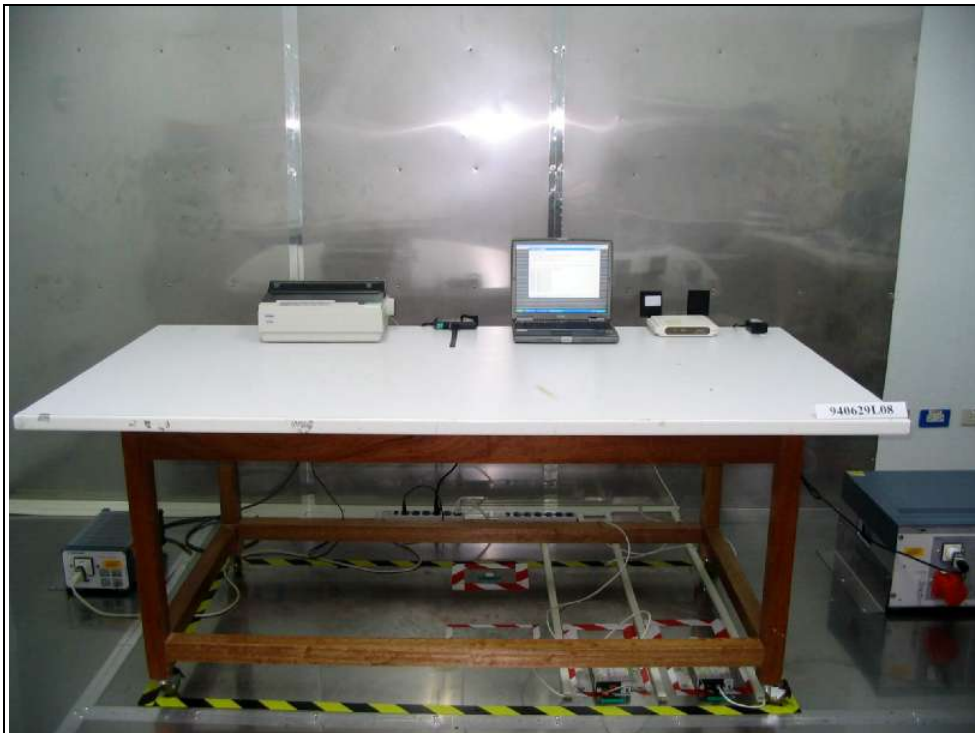
Test Mode C1



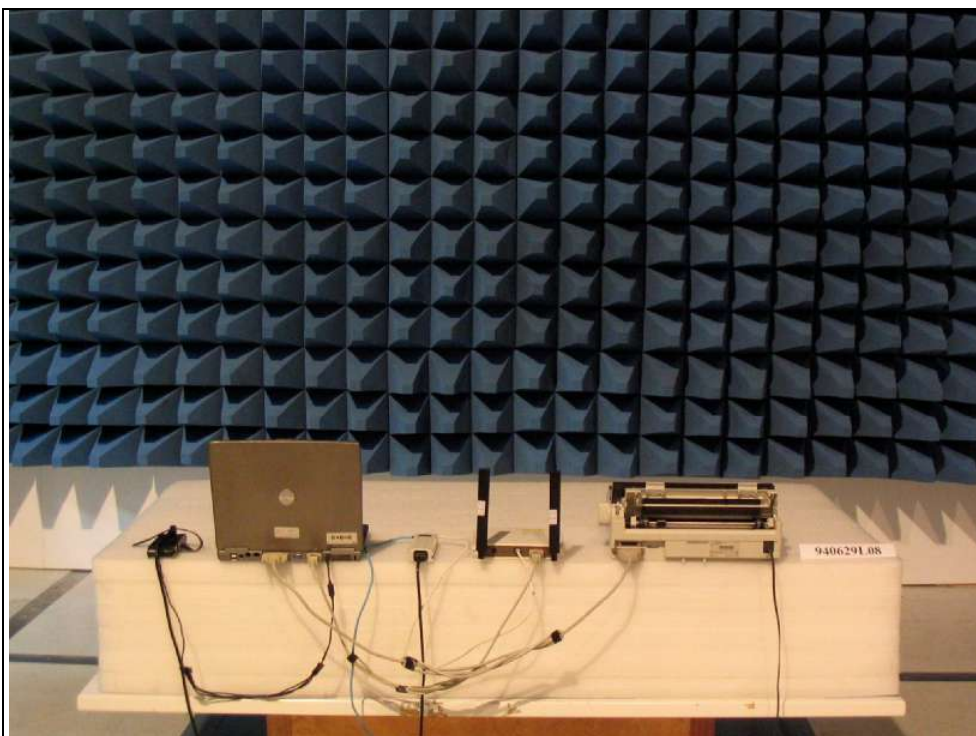
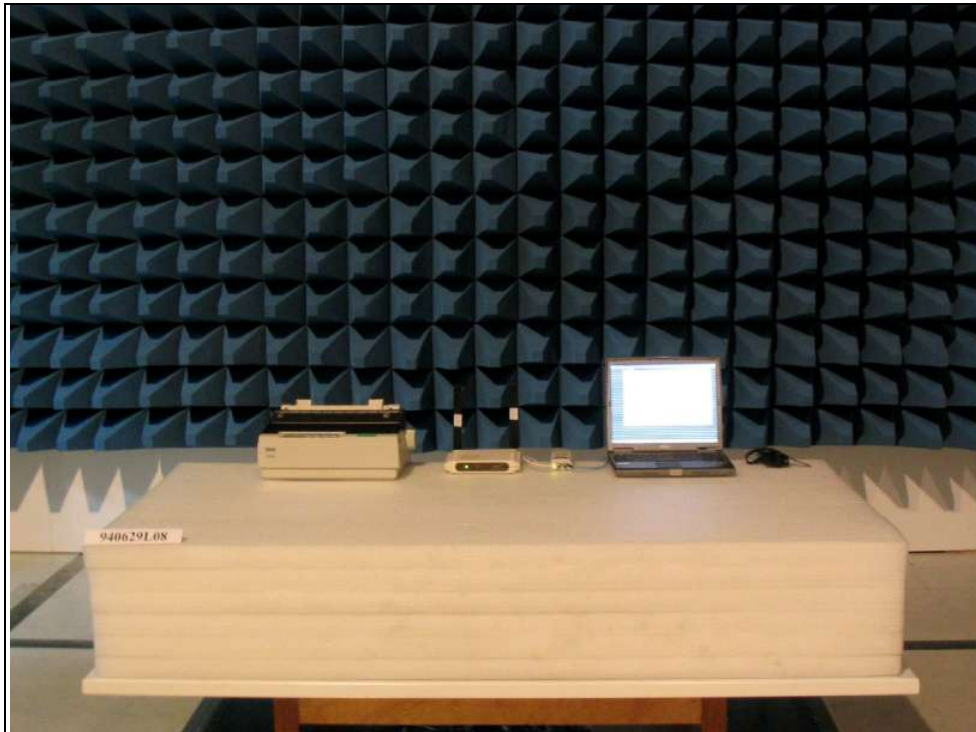
Test Mode C2



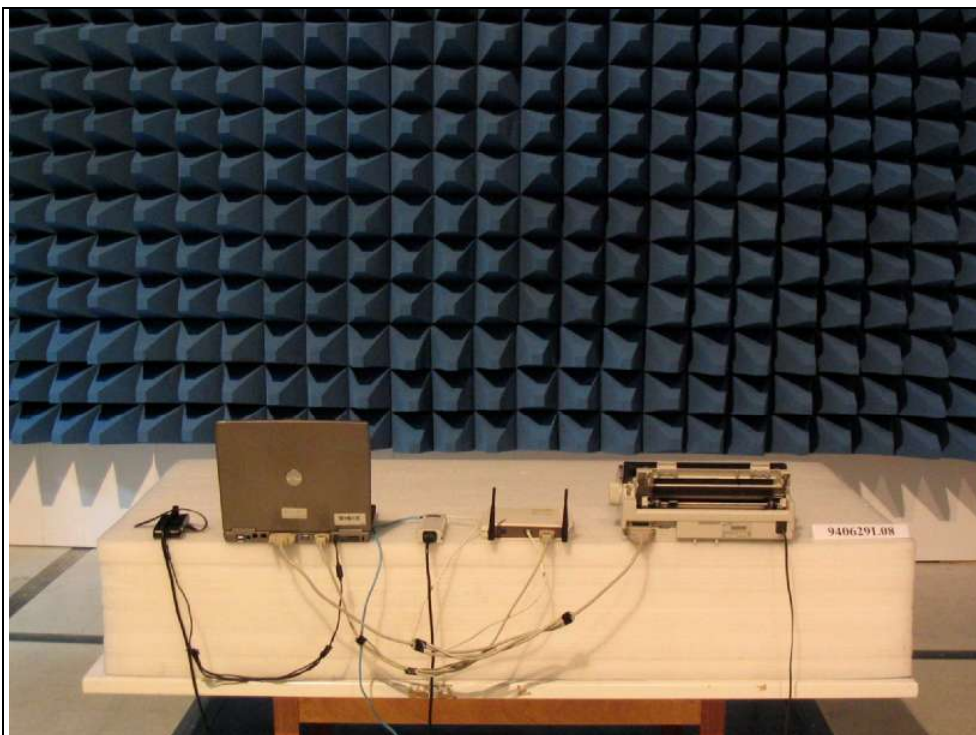
Test Mode C3



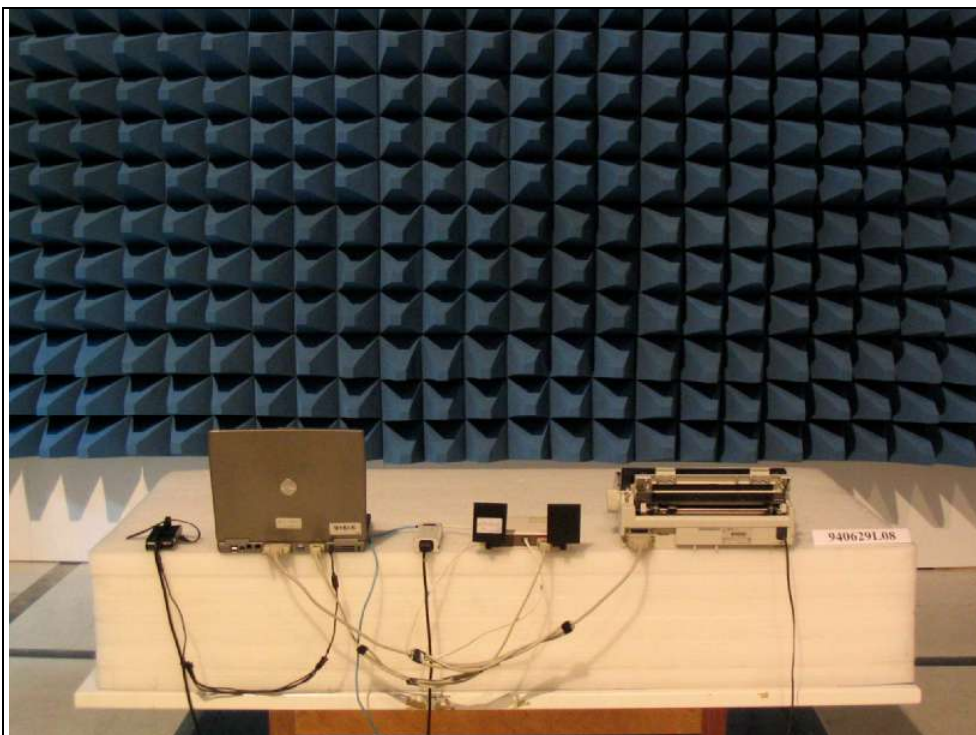
RADIATED EMISSION TEST Test Mode A1



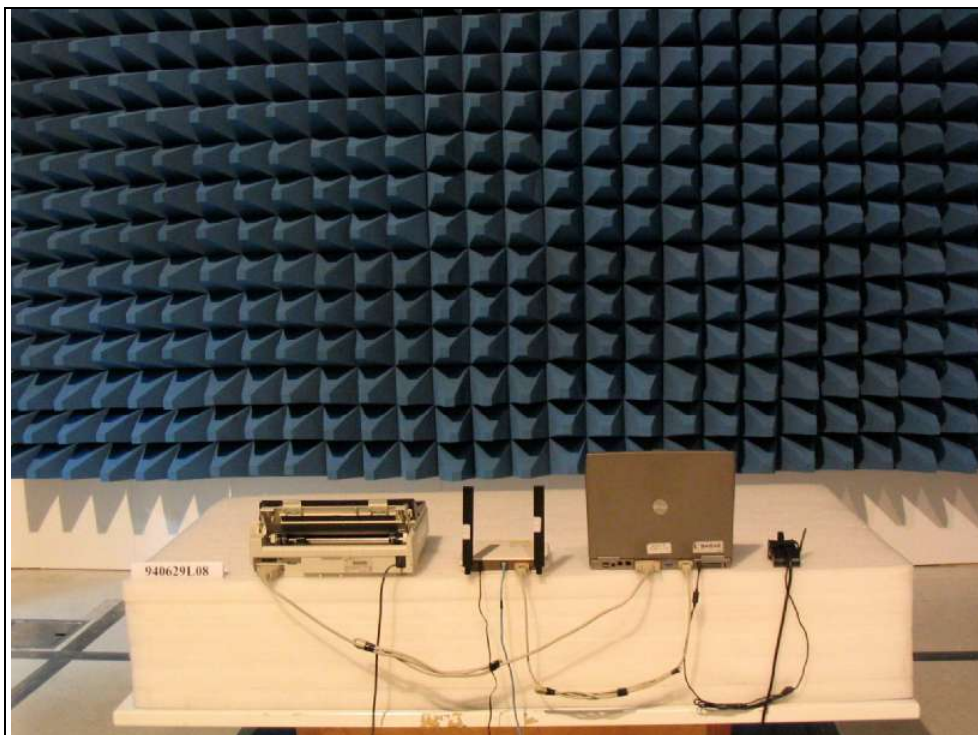
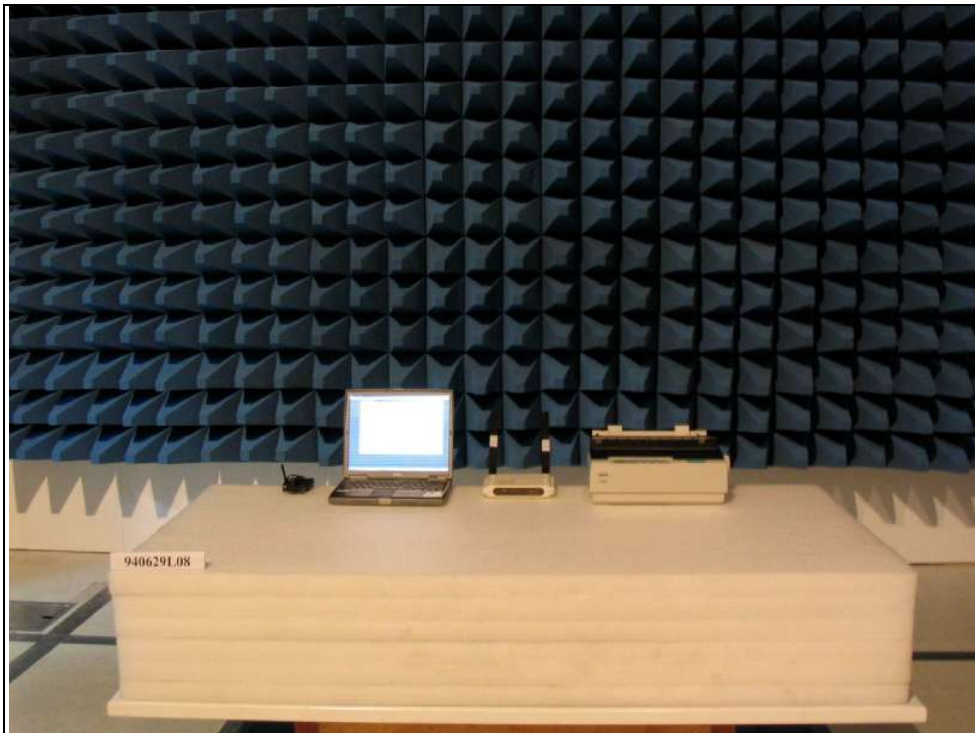
Test Mode A2



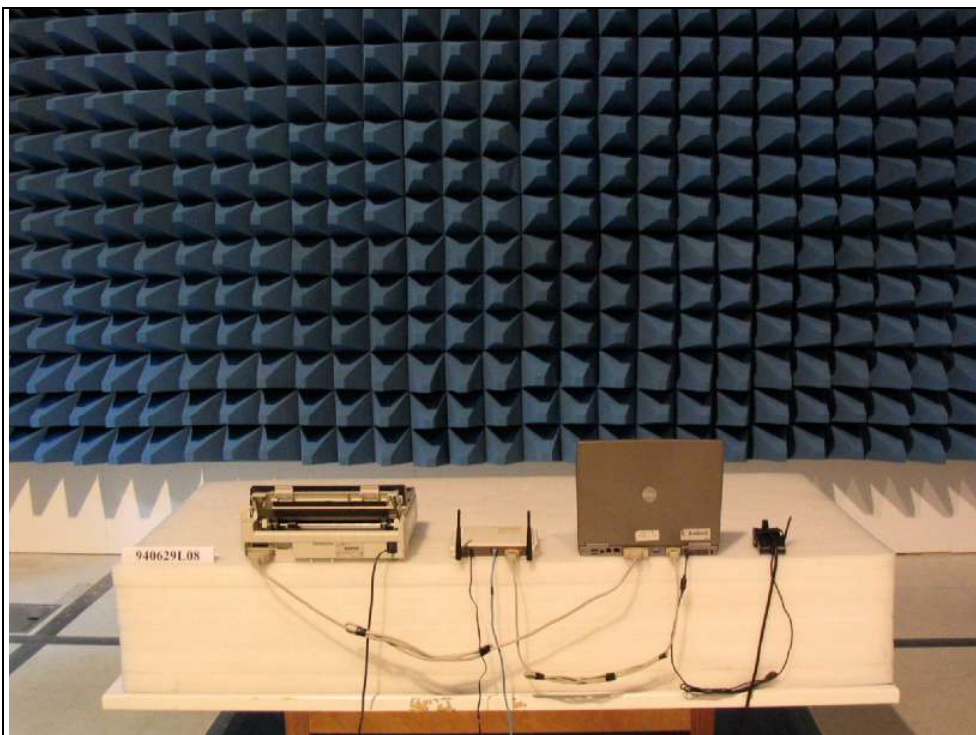
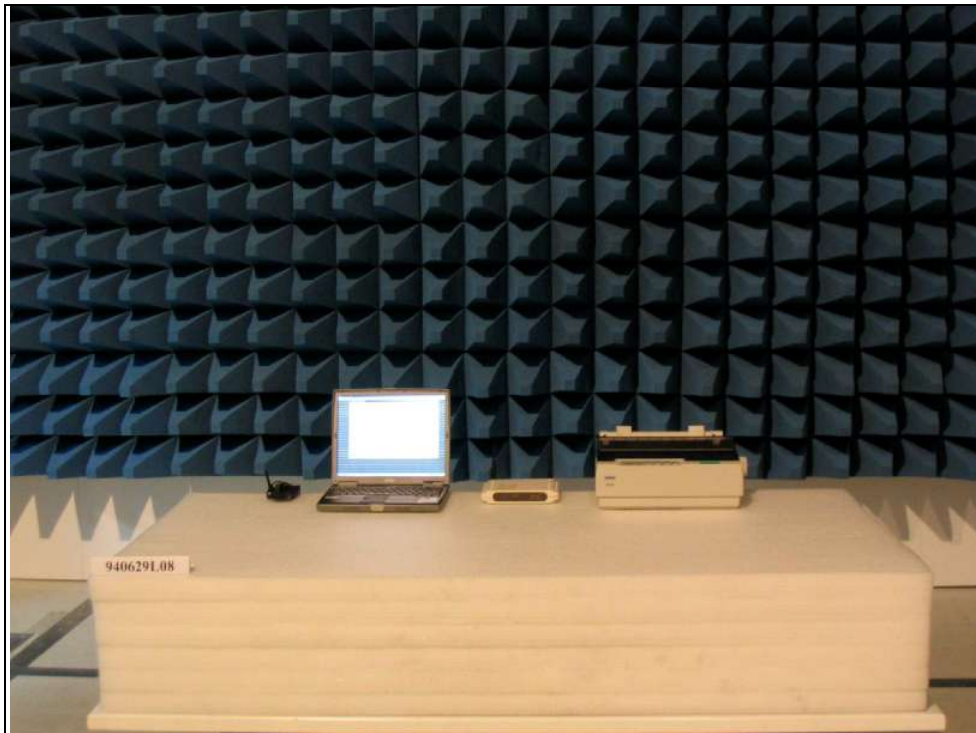
Test Mode A3



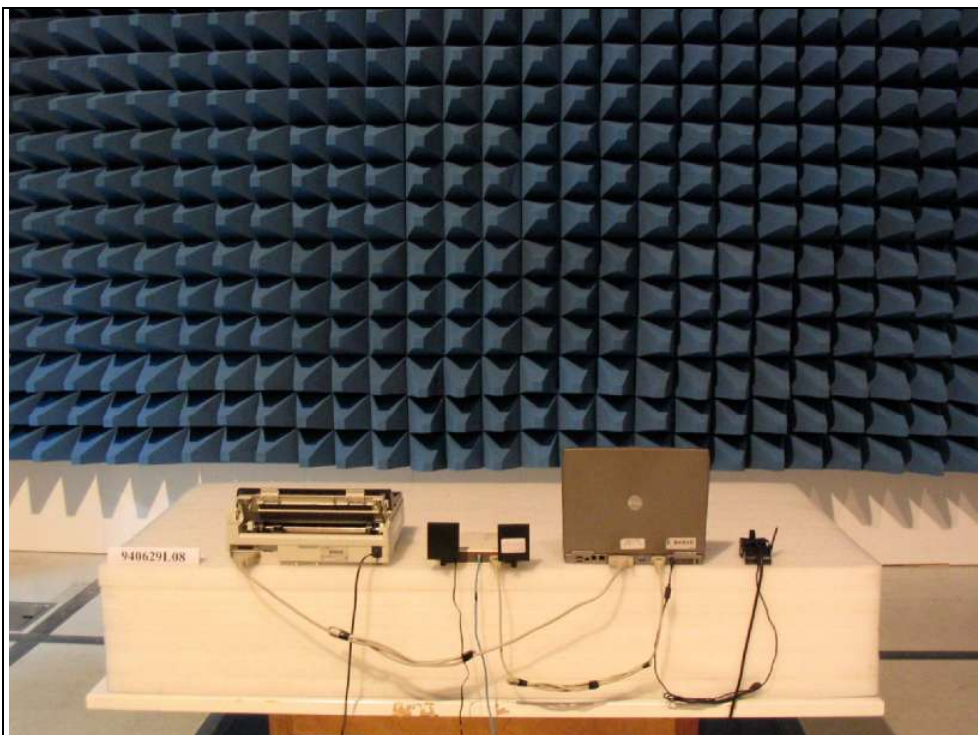
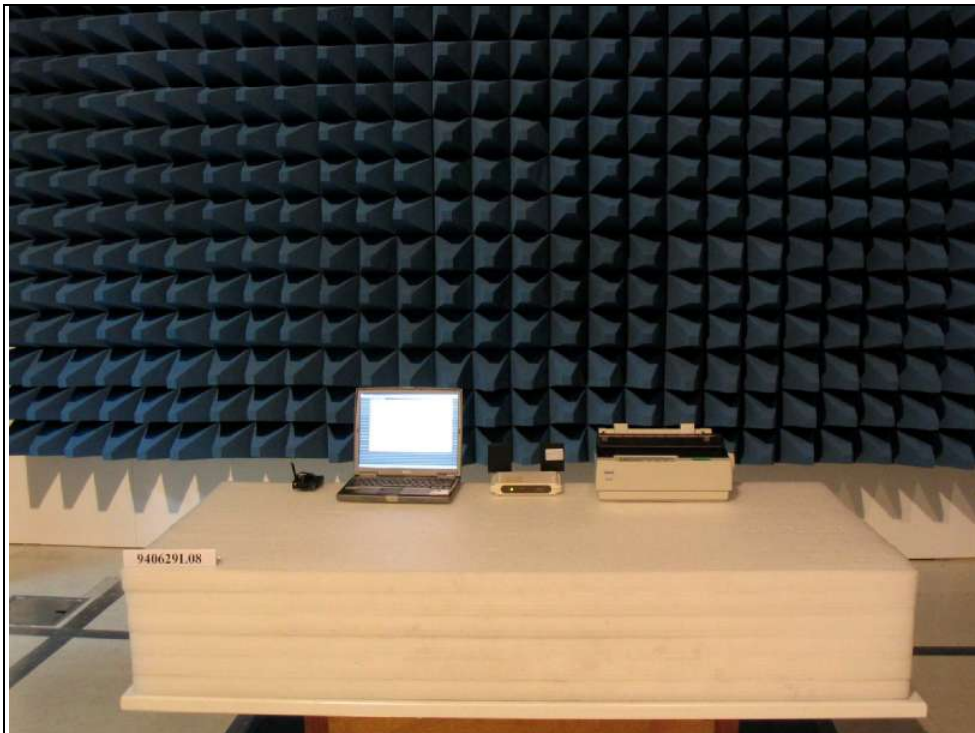
Test Mode B1



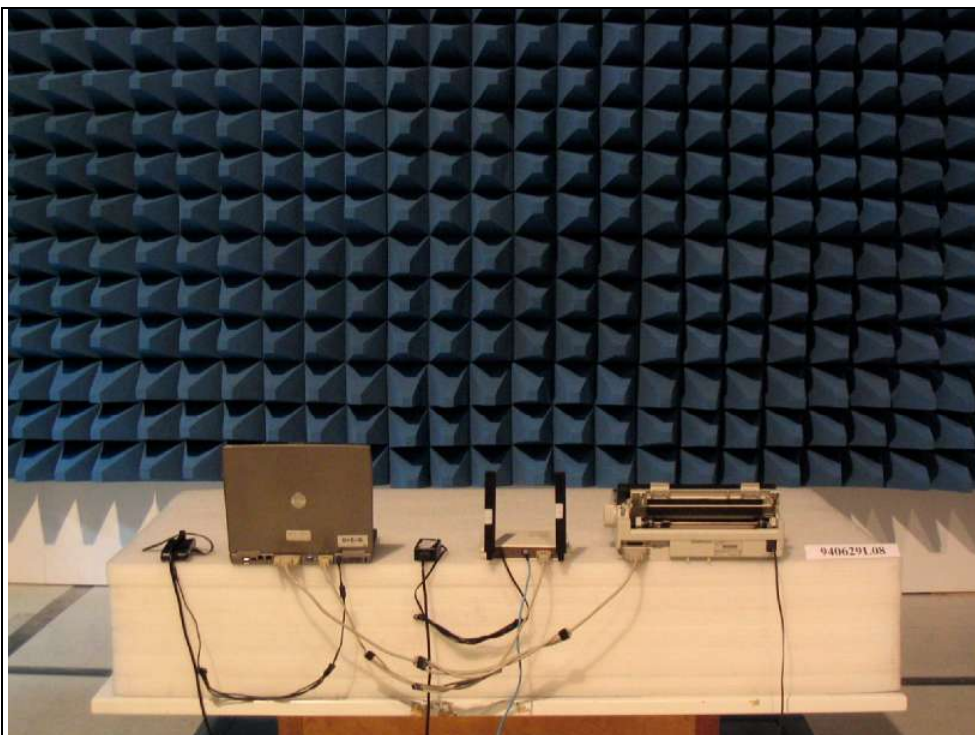
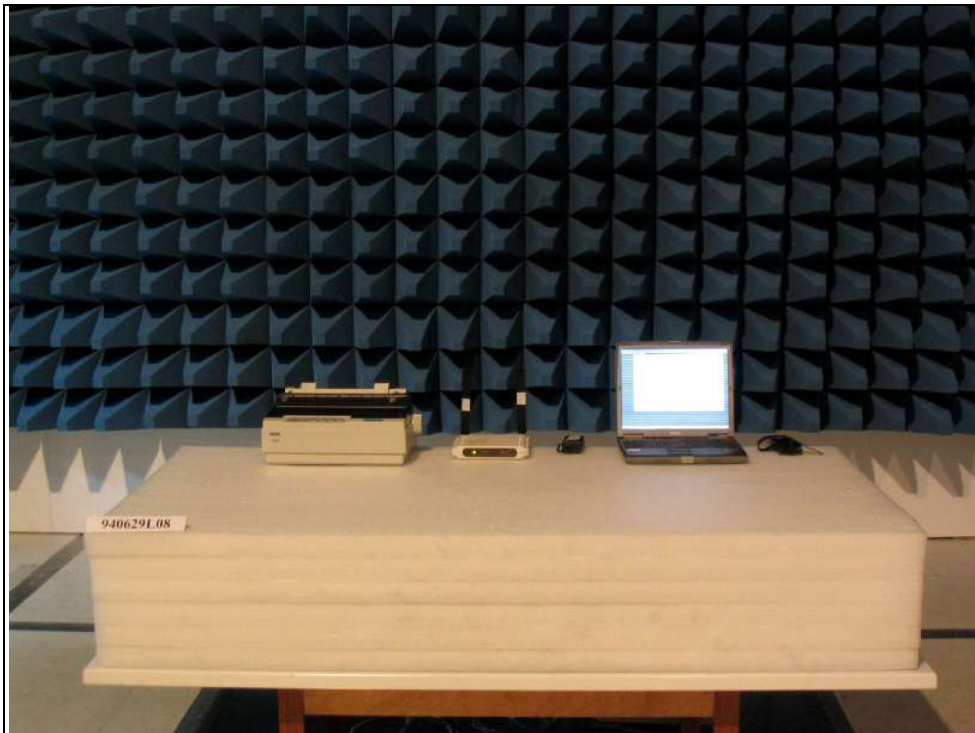
Test Mode B2



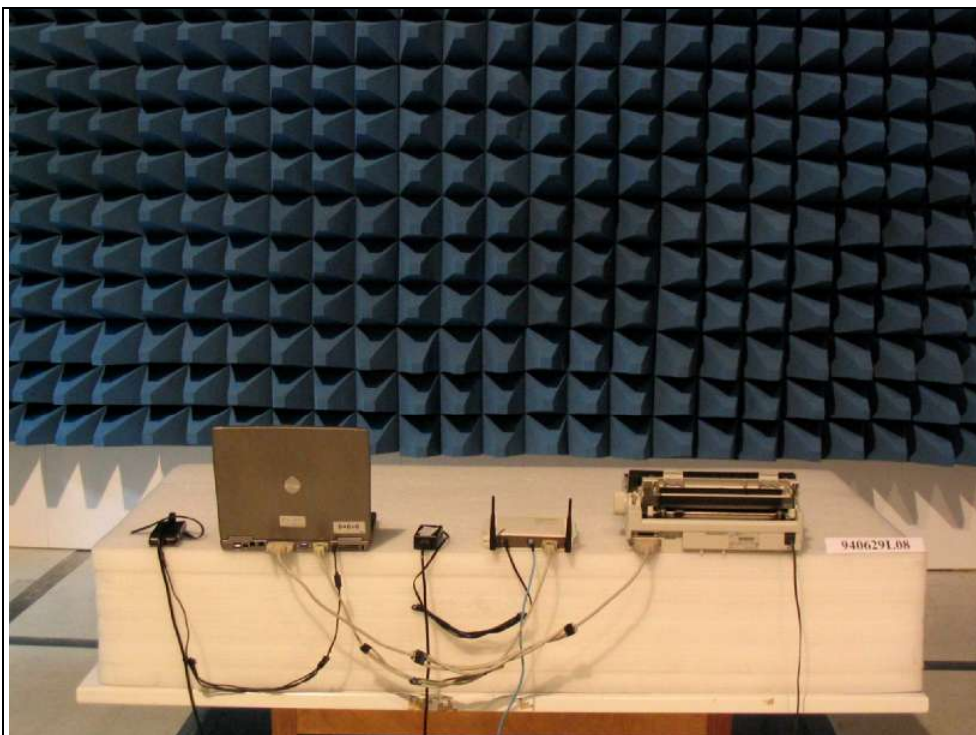
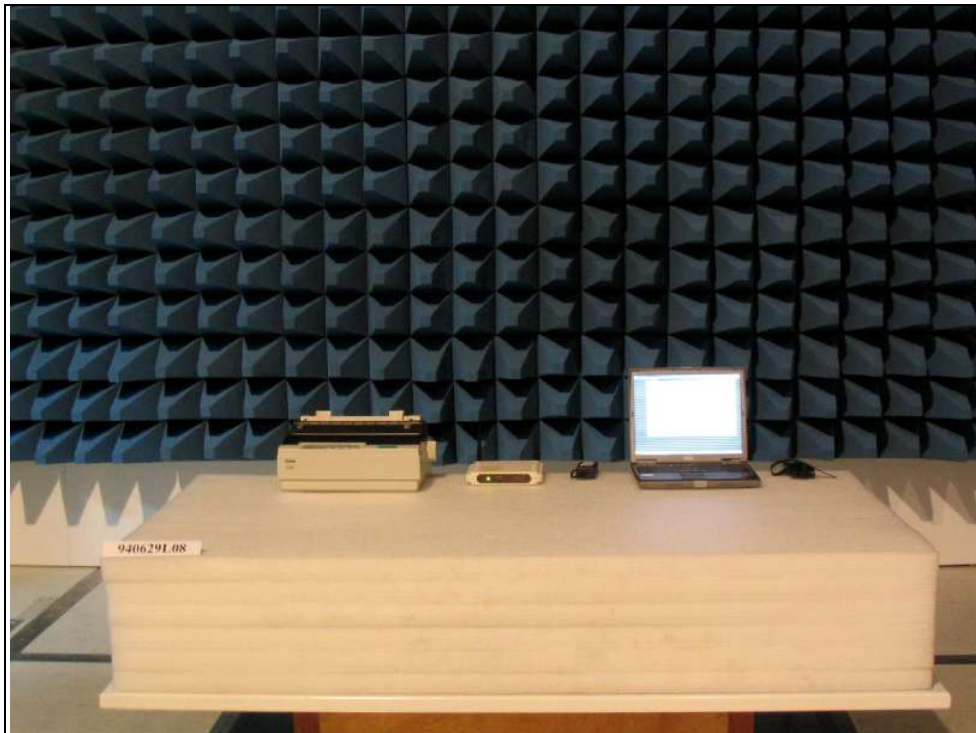
Test Mode B3



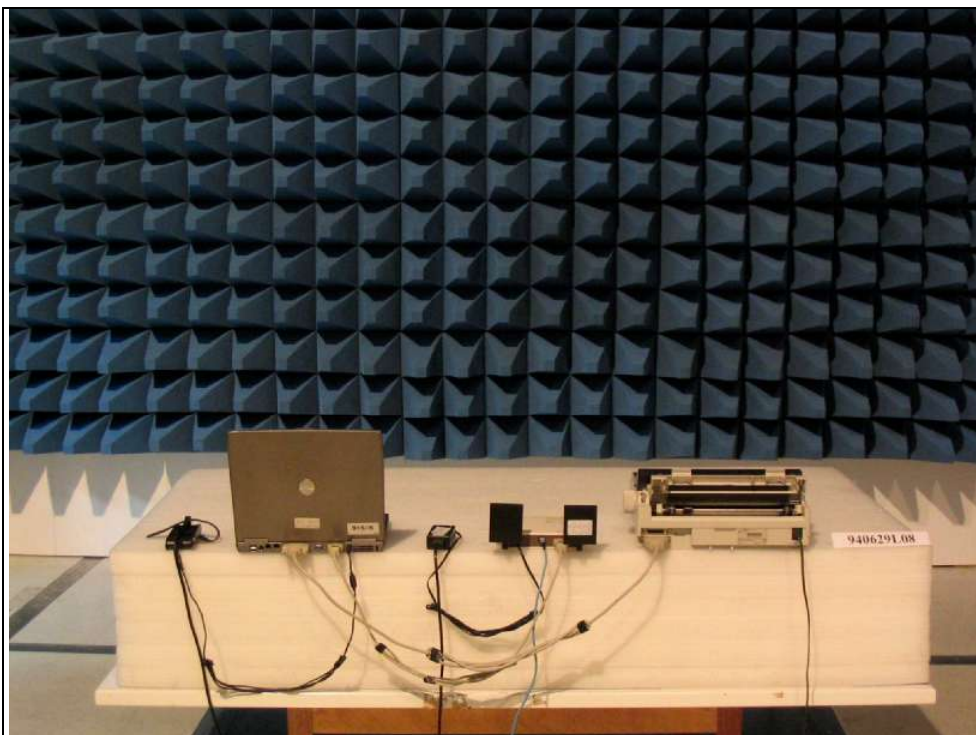
Test Mode C1



Test Mode C2



Test Mode C3





6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, NVLAP, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Linko RF Lab.

Tel: 886-3-3270910

Fax: 886-3-3270892

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also