



**FCC 47 CFR PART 15 SUBPART E  
(Class II Permissive Change)**

**TEST REPORT**

**For**

**802.11a/b/g AP**

**Model: SS-200-AT**

**Trade Name: AirTight Networks**

*Issued to*

**AirTight Networks, Inc**  
**339N. Bernardo Avenue, Suite 200 Mountain View,**  
**CA 94043**

*Issued by*



**Compliance Certification Services Inc.**  
**No. 81-1, Lane 210, Bade Rd. 2, Luchu Hsiang,**  
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## 1. TEST RESULT CERTIFICATION

**Applicant:** AirTight Networks, Inc  
339N. Bernardo Avenue, Suite 200 Mountain View,  
CA 94043

**Equipment Under Test:** 802.11a/b/g AP

**Trade Name:** AirTight Networks

**Model:** SS-200-AT

**Date of Test:** July 6 ~ 7, 2006

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart E	No non-compliance noted

### We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

*Approved by:*

*Reviewed by:*

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Gavin Lim  
Section Manager  
Compliance Certification Services Inc.

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Amanda Wu  
Section Manager  
Compliance Certification Services Inc.



## 2. EUT DESCRIPTION

Product	802.11a/b/g AP
Trade Name	AirTight Networks
Model Number	SS-200-AT
Model Discrepancy	N/A
Power Supply	DELTA / ADP-15KB I/P: 100-240V, 0.5A, 50-60Hz O/P: 5.1V, 3.0A
Frequency Range	Base mode: 5.15 ~ 5.35 GHz Turbo mode: 5.210 GHz / 5.250 GHz / 5.290 GHz
Transmit Power	Original power listed on the grant
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Transmit Data Rate	108, 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Number of Channels	Base mode: 8 Channels Turbo mode: 3 Channels
Antenna Specification	The EUT comes with three different antennas for 5GHz: Approved Antenna Omnidirectional Panel antenna / 3.0 dBi for 2.4 GHz and 5 GHz Omnidirectional antenna / 6.0 dBi for 5 GHz New Antenna Dual-band Omni Antenna / 6 dBi for 2.4GHz and 6.5dBi for 5GHz
Class II Permissive Change	Added one antenna, for detail descriptions, please refers to the antenna spec.

### **Operation Frequency:**

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)	
CHANNEL	MHz
1	5180
2	5200
3	5220
4	5240
5	5260
6	5280
7	5300
8	5320

### **Remark:**

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: TORSS-200-AT filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.



### **3. TEST METHODOLOGY**

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

#### **3.1 EUT CONFIGURATION**

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

#### **3.2 EUT EXERCISE**

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

#### **3.3 GENERAL TEST PROCEDURES**

##### **Conducted Emissions**

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

##### **Radiated Emissions**

The EUT is placed on the turntable, which is 0.8 m above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.



### 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

- (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

- (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 3.5 DESCRIPTION OF TEST MODES

The EUT (model: SS-200-AT) with new antenna had been tested under operating condition. Software used to control the EUT for staying in continuous transmitting mode was programmed. After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

Base mode:

Channel Low (5180MHz), Channel Mid (5260MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

Turbo mode:

Channel Low (5210MHz), Channel Mid (5250MHz) and Channel High (5290MHz) with 12Mbps data rate were chosen for full testing.



## 4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

### 4.1 MEASUREMENT EQUIPMENT USED

#### Equipment Used for Emissions Measurement

**Remark:** Each piece of equipment is scheduled for calibration once a year.

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	07/25/2006
Test Receiver	Rohde&Schwarz	ESCI	100064	11/05/2006
Switch Controller	TRC	Switch Controller	SC94050010	05/05/2007
4 Port Switch	TRC	4 Port Switch	SC94050020	05/05/2007
Horn-Antenna	TRC	HA-0502	06	06/02/2007
Horn-Antenna	TRC	HA-0801	04	05/05/2007
Horn-Antenna	TRC	HA-1201A	01	07/04/2007
Horn-Antenna	TRC	HA-1301A	01	07/04/2007
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/09/2007
Turn Table	Max-Full	MFT-120S	T120S940302	N.C.R.
Antenna Tower	Max-Full	MFA-430	A440940302	N.C.R.
Controller	Max-Full	MF-CM886	CC-C-1F-13	N.C.R.
Site NSA	CCS	N/A	FCC: 965860 IC: IC 6106	09/26/2008
Test S/W	LABVIEW (V 6.1)			

**Remark:** The measurement uncertainty is less than +/- 2.0065dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.



## **5. FACILITIES AND ACCREDITATIONS**

### **5.1 FACILITIES**

All measurement facilities used to collect the measurement data are located at

☐ No. 199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No. No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☒ No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

### **5.2 EQUIPMENT**

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.








Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."



### 5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	EN 55011, EN 55014-1/2, CISPR 11, CISPR 14-1/2, EN 55022, EN 55015, CISPR 22, CISPR 15, AS/NZS 3548, VCCI V3 (2001), CFR 47, FCC Part 15/18, CNS 13783-1, CNS 13439, CNS 13438, CNS 13803, CNS 14115, EN 55024, IEC 801-2, IEC 801-3, IEC 801-4, IEC/EN 61000-3-2, EIC/EN 61000-3-3, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 50081-1/ EN 61000-6-3, EN 50081-2/EN 61000-6-4, EN 50081-2/EN 61000-6-1: 2001	 0824-01
USA	FCC	3/10 meter Open Area Test Sites (93105, 90471) / 3M Semi Anechoic Chamber (965860) to perform FCC Part 15/18 measurements	 93105, 90471 965860
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	 R-393/1066/725/879 C-402/747/912
Norway	NEMKO	EN 50081-1/2, EN 50082-1/2, IEC 61000-6-1/2, EN 50091-2, EN 50130-4, EN 55011, EN 55013, EN 55014-1/2, EN 55015, EN 55022, EN 55024, EN 61000-3-2/3, EN 61326-1, IEC 61000-4-2/3/4/5/6/8/11, EN 60601-1-2, EN 300 328, EN 300 422-2, EN 301 419-1, EN 301 489-01/03/07/08/09/17, EN 301 419-2/3, EN 300 454-2, EN 301 357-2	 ELA 124a ELA 124b ELA 124c
Taiwan	TAF	EN 300 328, EN 300 220-1, EN 300 220-2, EN 300 220-3, 47 CFR FCC Part 15 Subpart C, EN 61000-3-2, EN 61000-3-3, CNS 13439, CNS 13783-1, CNS 14115, CNS 13438, AS/NZS CISPR 22, CNS 13022-1, IEC 61000-4-2/3/4/5/6/8/11, CNS 13022-2/3	 Testing Laboratory 0363
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	 SL2-IS-E-0014 SL2-IN-E-0014 SL2-A1-E-0014 SL2-R1-E-0014 SL2-R2-E-0014 SL2-L1-E-0014
Canada	Industry Canada	3/10 meter Open Area Test Sites (IC 3991-3, IC 3991-4) / 3M Semi Anechoic Chamber (IC 6106) to perform RSS 212 Issue 1	 IC 3991-3 IC 3991-4 IC 6106

\* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.



## 6. SETUP OF EQUIPMENT UNDER TEST

### 6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix I for the actual connections between EUT and support equipment.

### 6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Notebook PC (Remote)	IBM	2672	9985H9M	WLAN: ANO20030400LEG Bluetooth: ANO20020100MTN	LAN Cable: Unshielded, 10m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
2.	Notebook PC (Remote)	Sony	PCG-6GFP	00045-578-554-578	WLAN: ETC094LPD0155 Bluetooth: ETC094LPD0156	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, .8m with a core

**Remark:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

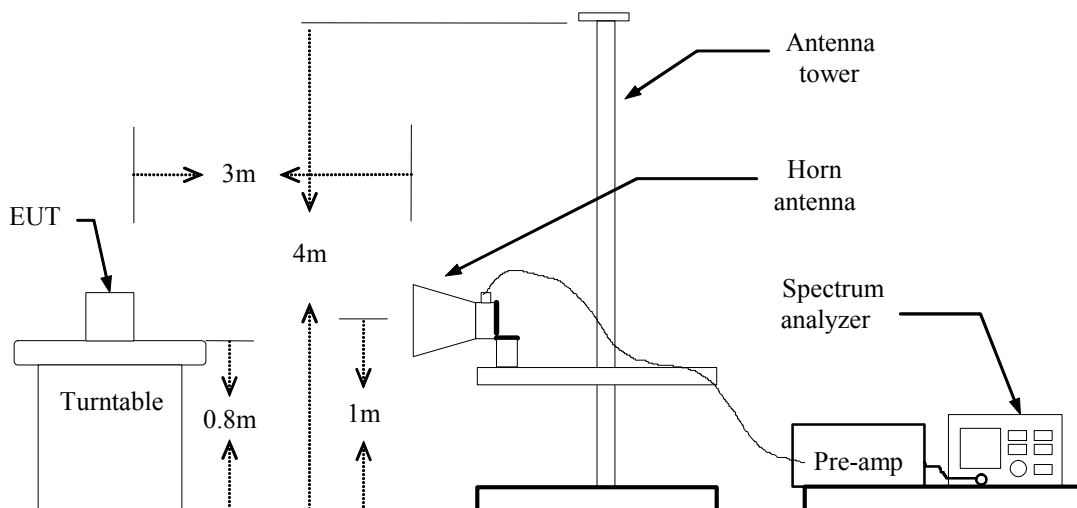
## 7. FCC PART 15 REQUIREMENTS

### 7.1 BAND EDGES MEASUREMENT

#### LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

#### Test Configuration



#### TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

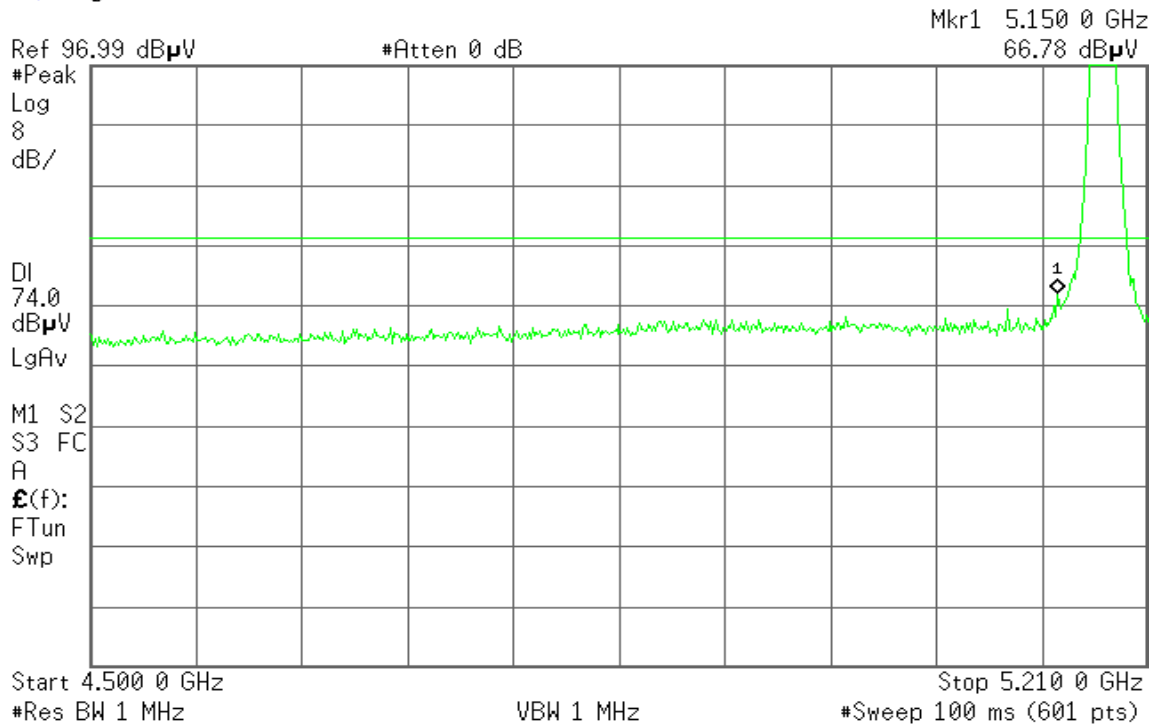
#### TEST RESULTS

Refer to attach spectrum analyzer data chart.

**Test Plot****IEEE 802.11a Base mode / CH Low****Detector mode: Peak****Polarity: Vertical**

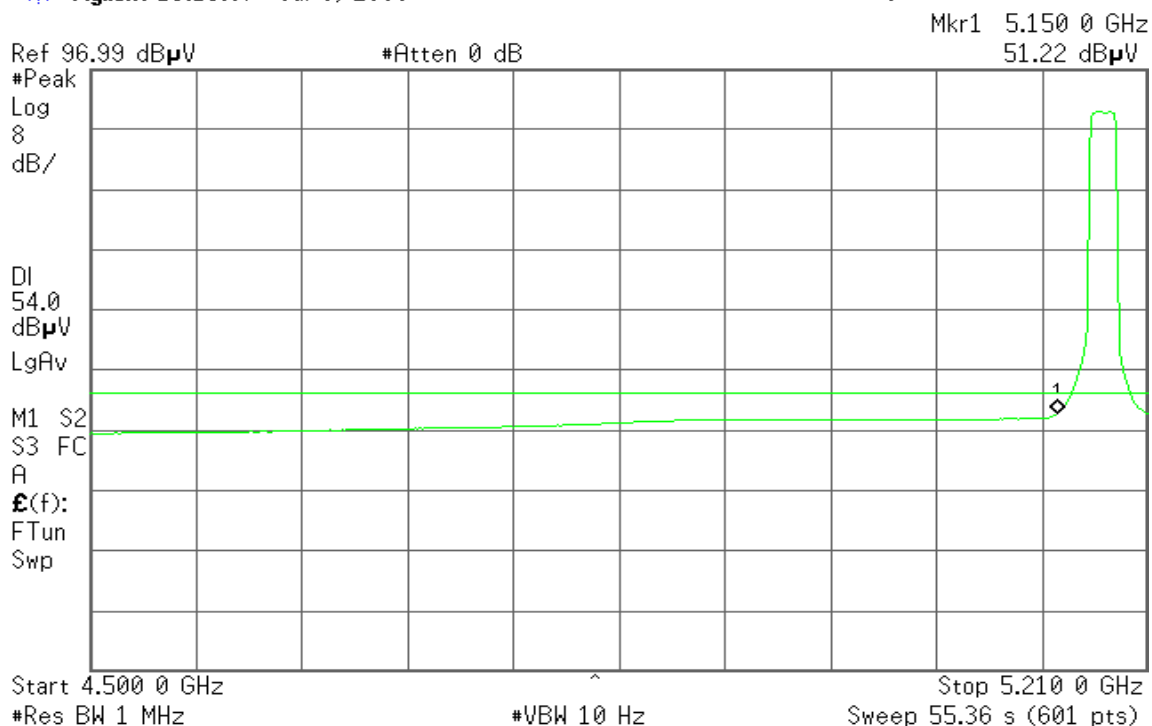
\* Agilent 12:06:12 Jul 6, 2006

T

**Detector mode: Average****Polarity: Vertical**

\* Agilent 13:13:07 Jul 6, 2006

T





## Detector mode: Peak

Polarity: Horizontal

Agilent 12:08:09 Jul 6, 2006

R L

Mkr1 5.150 0 GHz  
61.94 dB $\mu$ VRef 96.99 dB $\mu$ V

#Atten 0 dB

#Peak  
Log  
8  
dB/DI  
74.0  
dB $\mu$ V  
LgAvM1 S2  
S3 FC  
A  
£(f):  
FTun  
Swp

Start 4.500 0 GHz

#Res BW 1 MHz

VBW 1 MHz

Stop 5.210 0 GHz

#Sweep 100 ms (601 pts)

## Detector mode: Average

Polarity: Horizontal

Agilent 12:07:43 Jul 6, 2006

T

Mkr1 5.150 0 GHz  
50.61 dB $\mu$ VRef 96.99 dB $\mu$ V

#Atten 0 dB

#Peak  
Log  
8  
dB/DI  
54.0  
dB $\mu$ V  
LgAvM1 S2  
S3 FC  
A  
£(f):  
FTun  
Swp

Start 4.500 0 GHz

#Res BW 1 MHz

#VBW 10 Hz

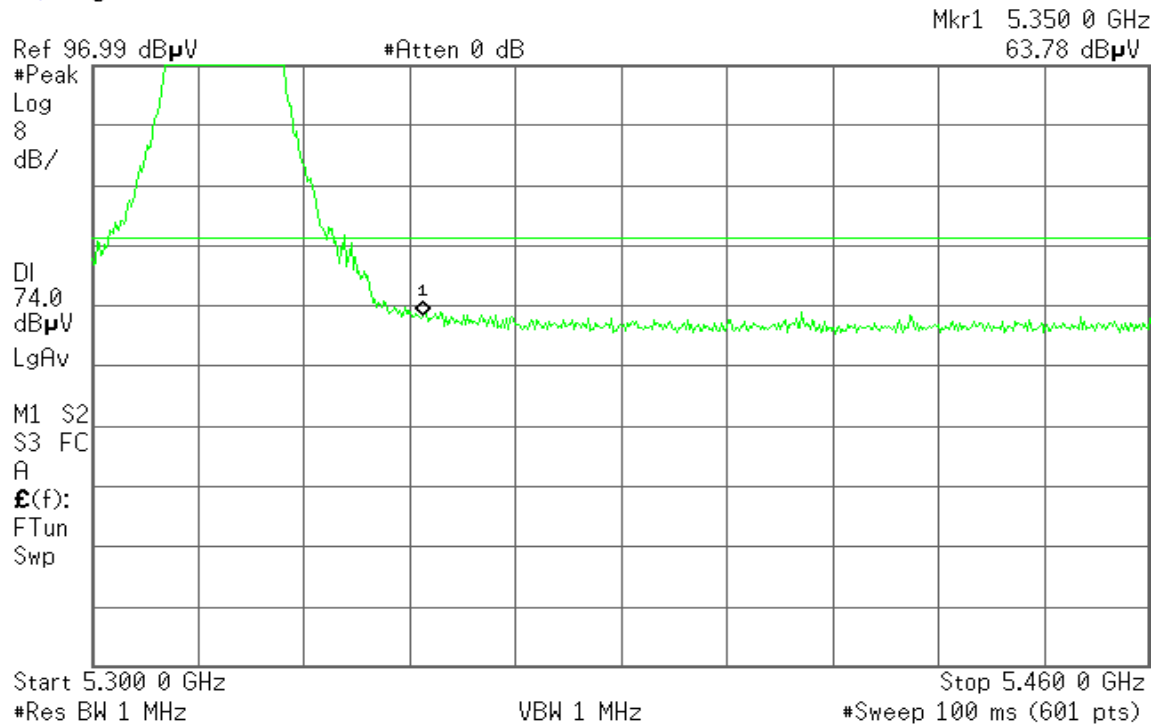
Stop 5.210 0 GHz

Sweep 55.36 s (601 pts)

**IEEE 802.11a Base mode / CH High****Detector mode: Peak****Polarity: Vertical**

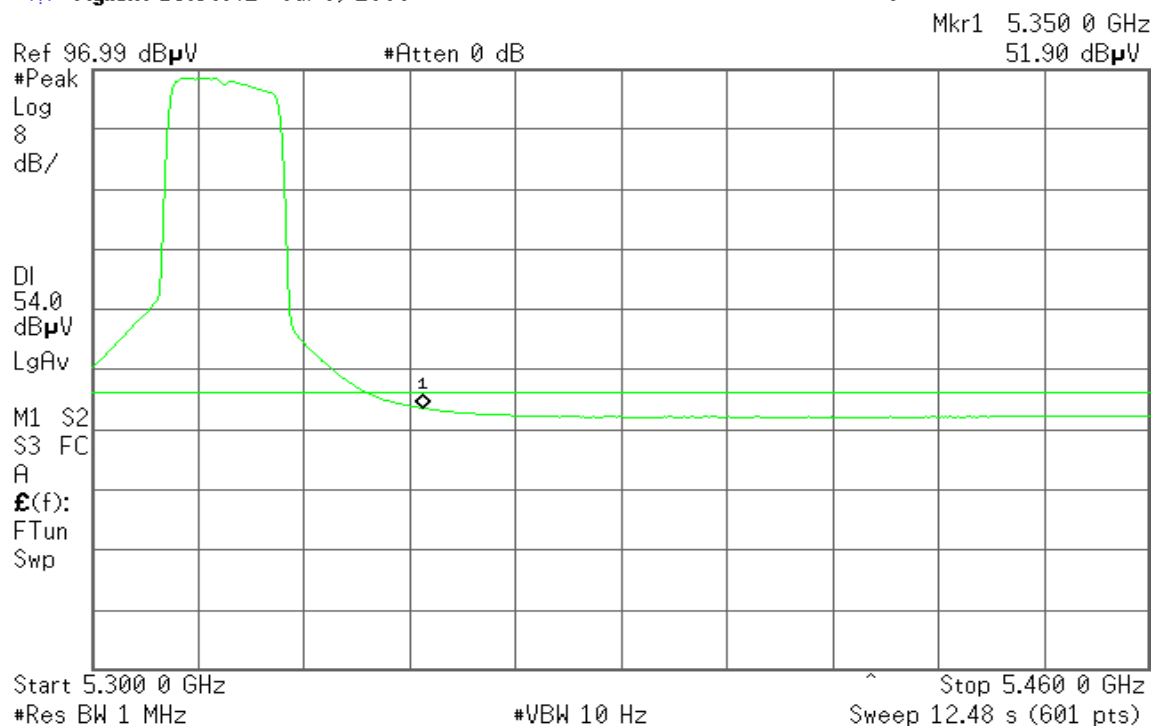
\* Agilent 13:37:13 Jul 6, 2006

T

**Detector mode: Average****Polarity: Vertical**

\* Agilent 13:36:42 Jul 6, 2006

T



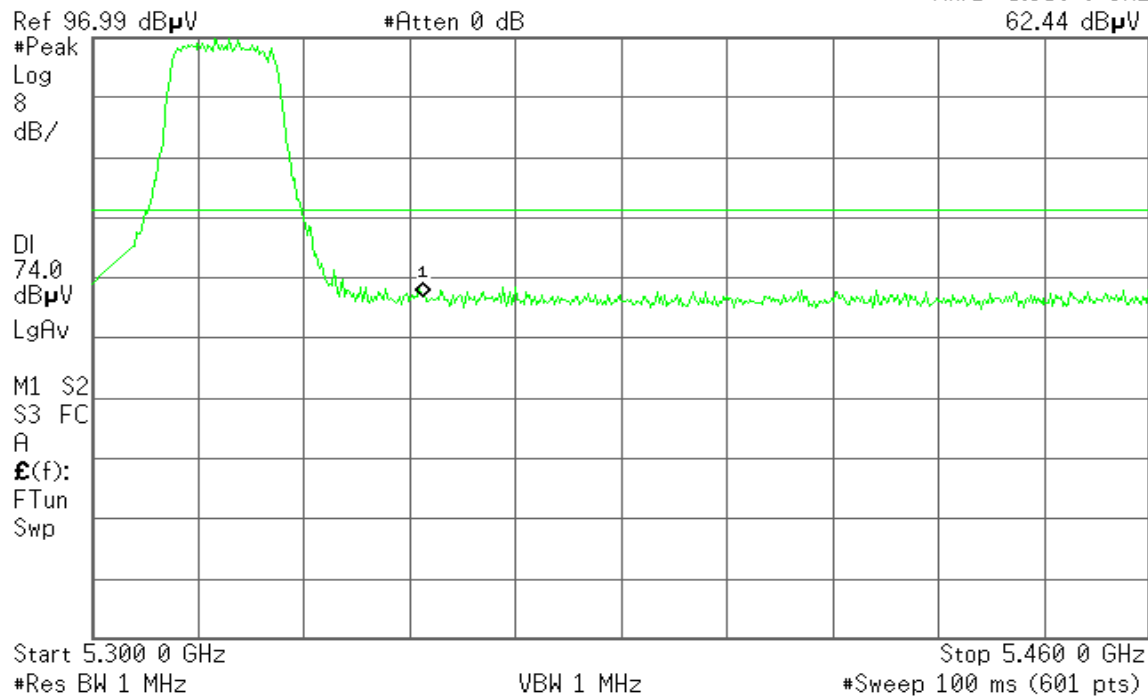


Detector mode: Peak

Polarity: Horizontal

Agilent 13:38:44 Jul 6, 2006

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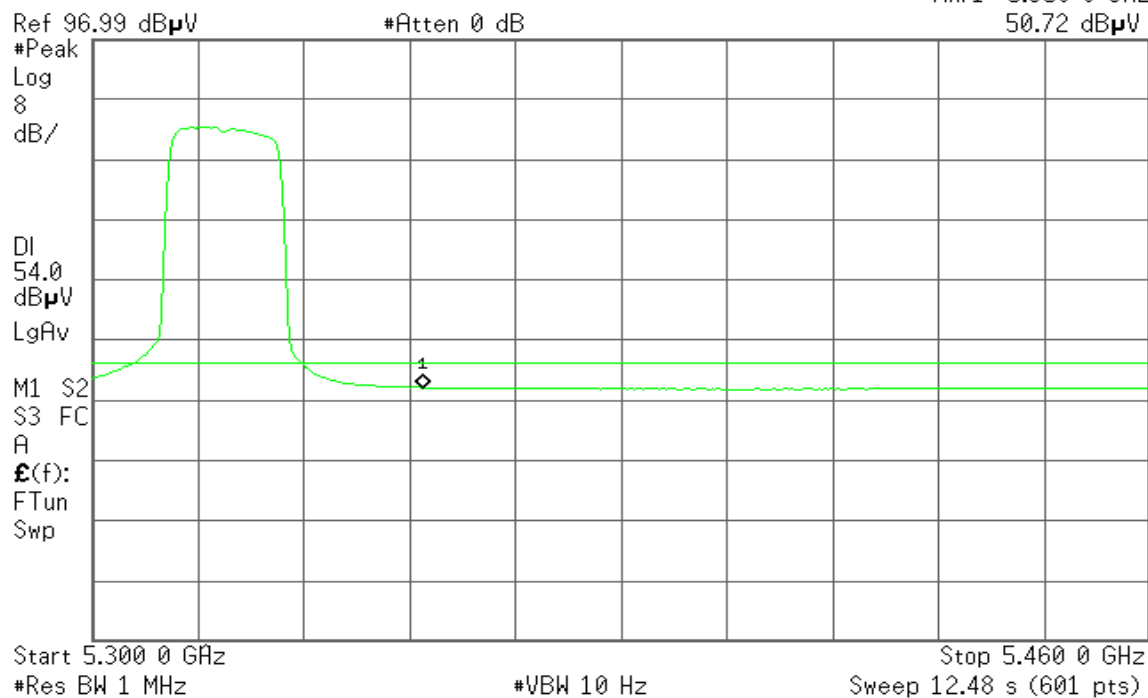
Mkr1 5.350 0 GHz  
62.44 dB $\mu$ V

Detector mode: Average

Polarity: Horizontal

Agilent 13:38:21 Jul 6, 2006

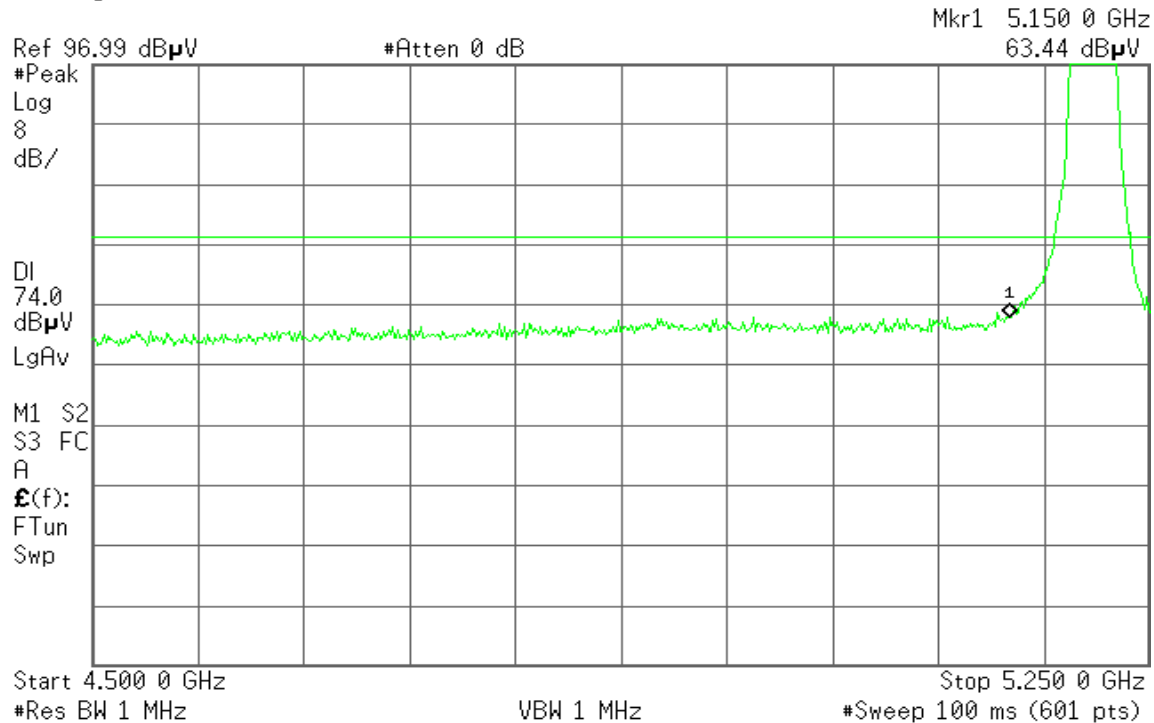
T

Mkr1 5.350 0 GHz  
50.72 dB $\mu$ V

**IEEE 802.11a Turbo mode / CH Low****Detector mode: Peak****Polarity: Vertical**

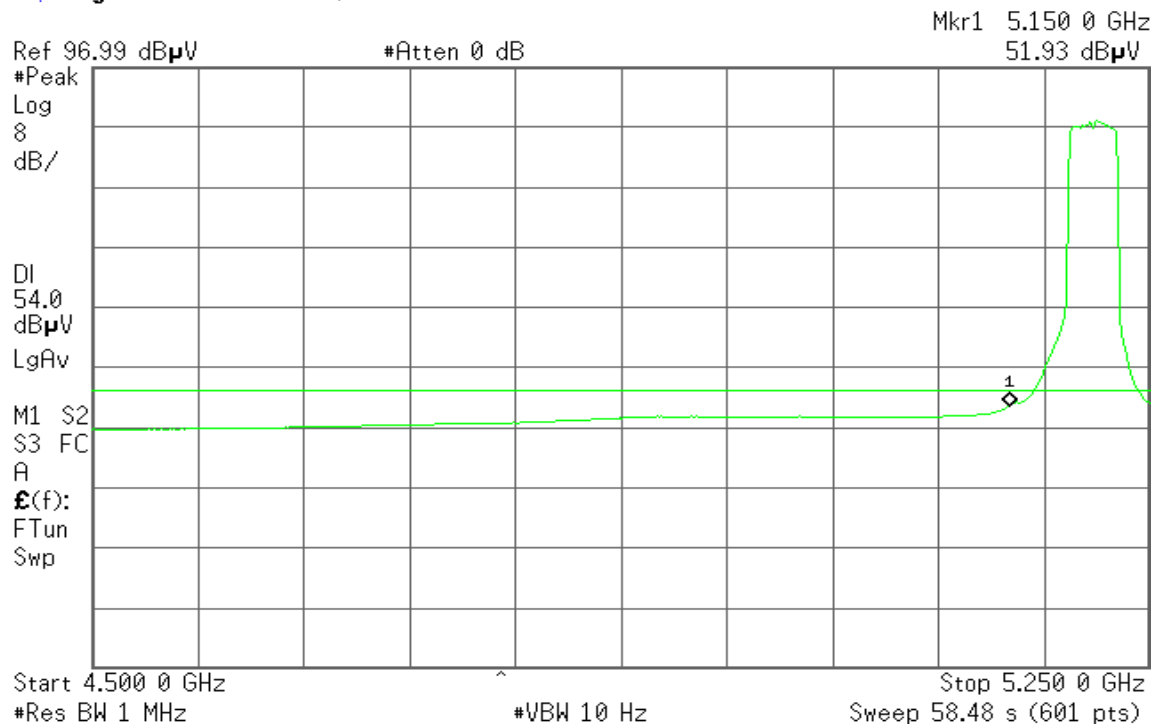
\* Agilent 13:53:43 Jul 6, 2006

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**Detector mode: Average****Polarity: Vertical**

\* Agilent 13:53:17 Jul 6, 2006

T







Detector mode: Peak

Polarity: Horizontal

\* Agilent 13:57:07 Jul 6, 2006

T

Ref 96.99 dB $\mu$ V

#Atten 0 dB

Mkr1 5.150 0 GHz  
61.78 dB $\mu$ V#Peak  
Log  
8  
dB/DI  
74.0  
dB $\mu$ V  
LgAvM1 S2  
S3 FC  
A  
E(f):  
FTun  
Swp

Start 4.500 0 GHz

#Res BW 1 MHz

VBW 1 MHz

Stop 5.250 0 GHz

#Sweep 100 ms (601 pts)

Detector mode: Average

Polarity: Horizontal

\* Agilent 13:56:51 Jul 6, 2006

T

Ref 96.99 dB $\mu$ V

#Atten 0 dB

Mkr1 5.150 0 GHz  
50.66 dB $\mu$ V#Peak  
Log  
8  
dB/DI  
54.0  
dB $\mu$ V  
LgAvM1 S2  
S3 FC  
A  
E(f):  
FTun  
Swp

Start 4.500 0 GHz

#Res BW 1 MHz

#VBW 10 Hz

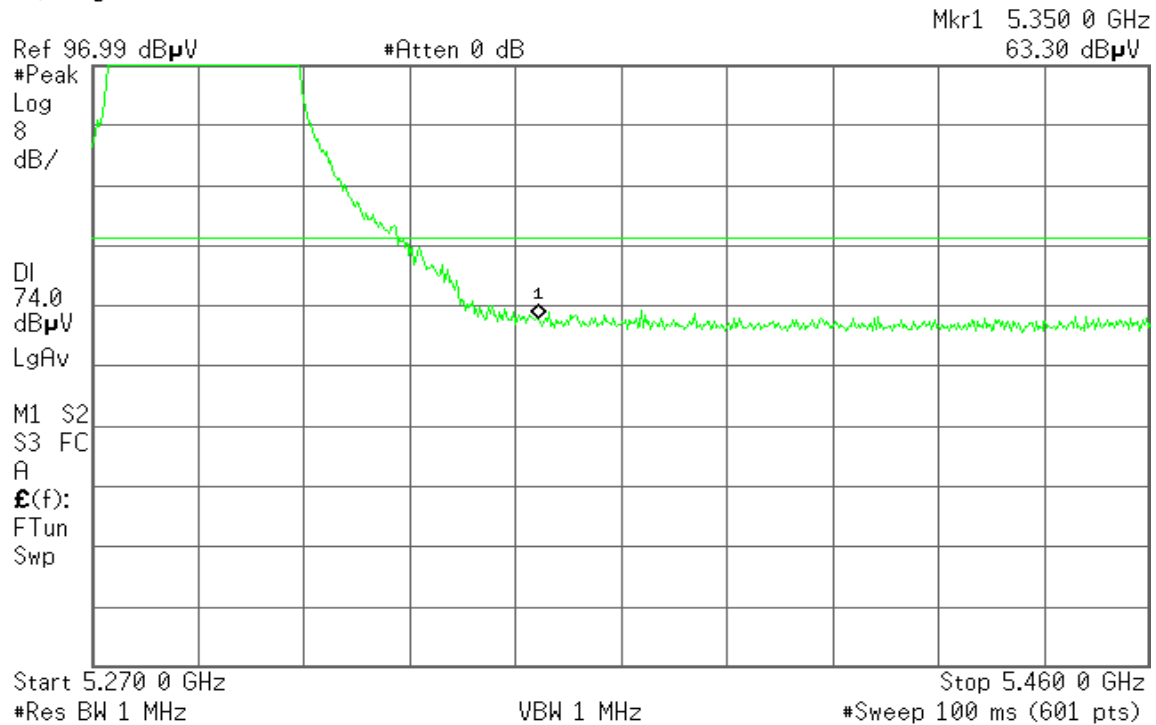
Stop 5.250 0 GHz

Sweep 58.48 s (601 pts)

**IEEE 802.11a Turbo mode / CH High****Detector mode: Peak****Polarity: Vertical**

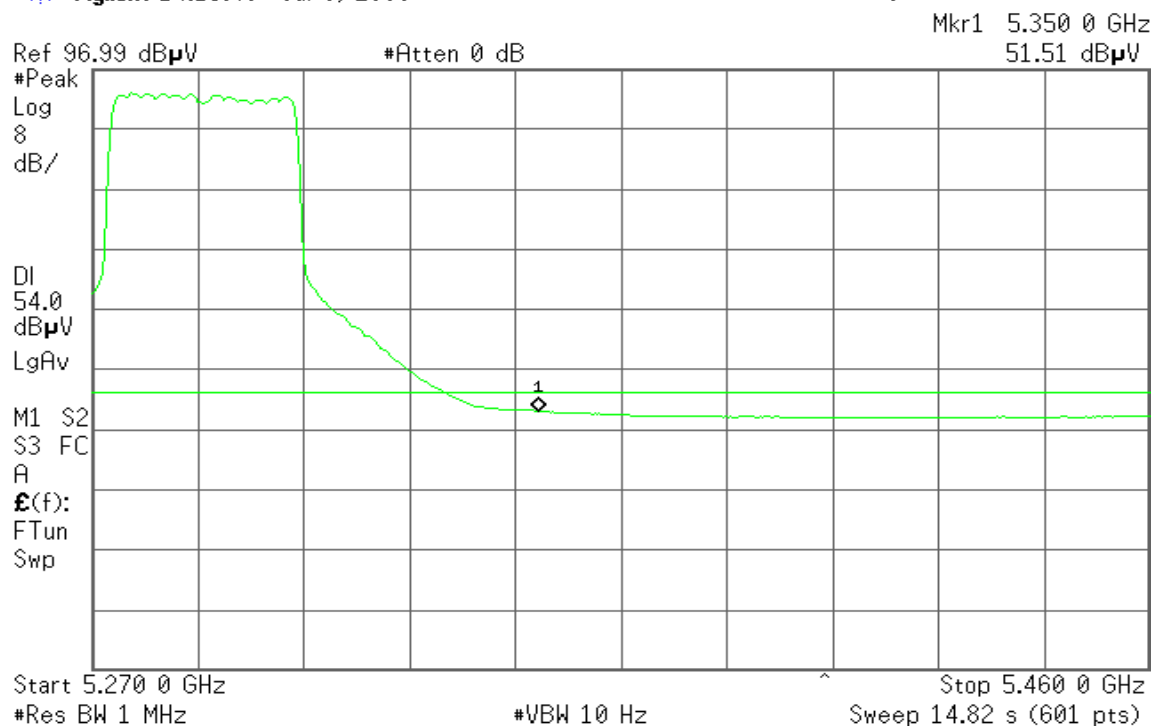
\* Agilent 14:13:04 Jul 6, 2006

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**Detector mode: Average****Polarity: Vertical**

\* Agilent 14:13:49 Jul 6, 2006

T



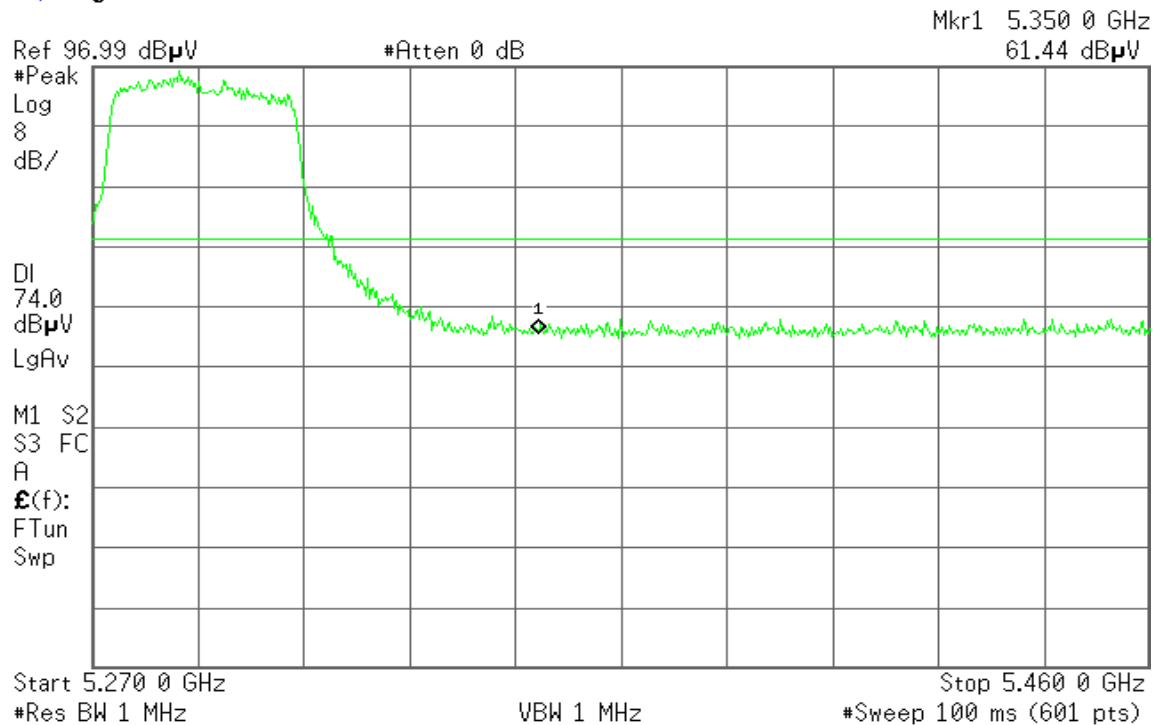


## Detector mode: Peak

Polarity: Horizontal

Agilent 14:15:48 Jul 6, 2006

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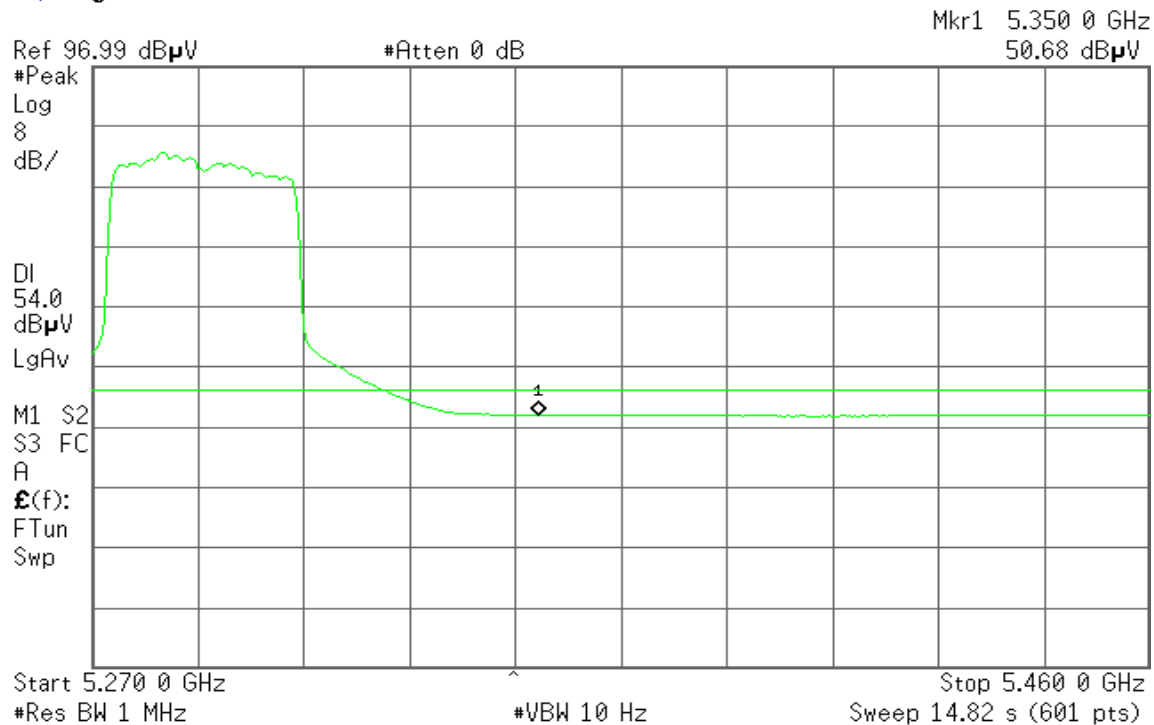


## Detector mode: Average

Polarity: Horizontal

Agilent 14:15:26 Jul 6, 2006

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## 7.2 RADIATED UNDESIRABLE EMISSION

### LIMIT

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

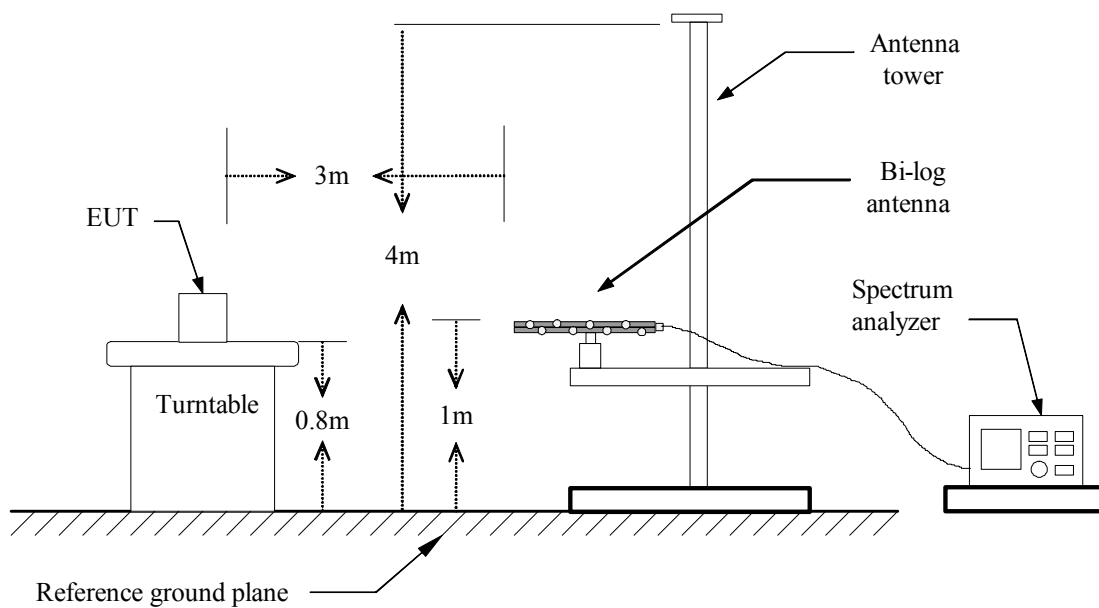
**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections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

2. In the emission table above, the tighter limit applies at the band edges.

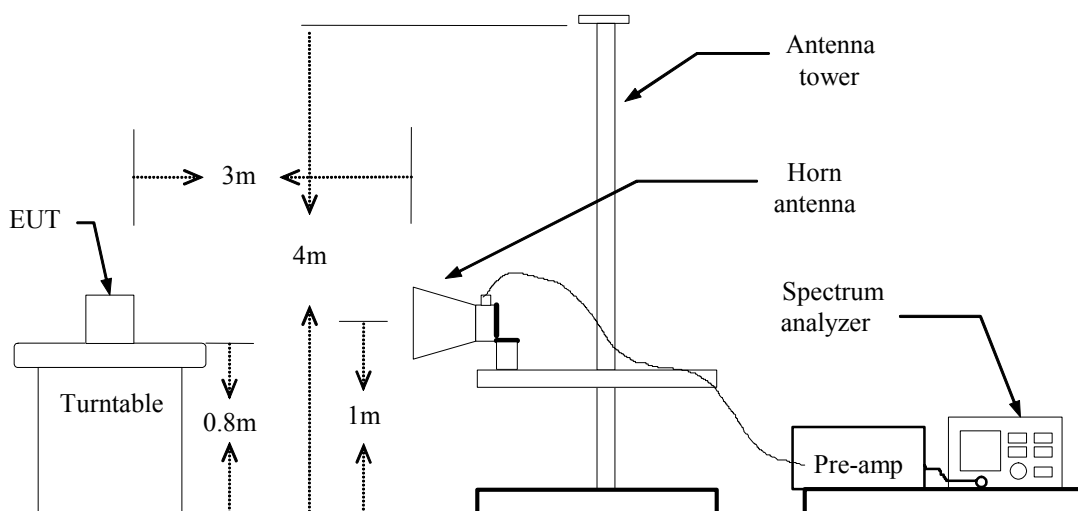
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

## Test Configuration

### Below 1 GHz



### Above 1 GHz





## **TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.



## TEST RESULTS

### Below 1 GHz

**Operation Mode:** Normal Link**Test Date:** July 7, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 51% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
38.08	V	QP	47.49	-11.60	35.89	40.00	-4.11
51.02	V	QP	50.72	-18.54	32.18	40.00	-7.82
105.98	V	Peak	50.16	-15.12	35.03	43.50	-8.47
199.75	V	Peak	48.38	-13.37	35.01	43.50	-8.49
479.43	V	Peak	43.23	-7.71	35.52	46.00	-10.48
880.37	V	Peak	38.37	-2.31	36.06	46.00	-9.94
199.75	H	Peak	43.08	-13.37	29.71	43.50	-13.79
374.35	H	Peak	38.42	-10.20	28.22	46.00	-17.78
440.63	H	Peak	46.56	-8.86	37.70	46.00	-8.30
479.43	H	Peak	45.63	-7.71	37.92	46.00	-8.08
500.45	H	Peak	39.76	-7.86	31.91	46.00	-14.09
880.37	H	Peak	39.81	-2.31	37.51	46.00	-8.49

**Remark:**

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/Quasi-peak detector mode.
3. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.

**Above 1 GHz****Operation Mode:** Tx / IEEE 802.11a Base mode / CH Low **Test Date:** July 6, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 52% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	19.49	---	28.01	47.50	---	74.00	54.00	-6.50	Peak
10350.00	V	52.52	39.08	12.91	65.43	51.99	74.00	54.00	-2.01	AVG
N/A										
1700.00	H	19.45	---	28.01	47.46	---	74.00	54.00	-6.54	Peak
10366.67	H	50.17	37.29	12.99	63.16	50.28	74.00	54.00	-3.72	AVG
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



**Operation Mode:** Tx / IEEE 802.11a Base mode / CH Mid **Test Date:** July 6, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 52% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	18.73	---	28.01	46.74	---	74.00	54.00	-7.26	Peak
10533.33	V	47.11	34.31	13.74	60.85	48.05	74.00	54.00	-5.95	AVG
N/A										
1700.00	H	18.89	---	28.01	46.90	---	74.00	54.00	-7.10	Peak
10516.67	H	47.55	35.05	13.71	61.26	48.76	74.00	54.00	-5.24	AVG
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** Tx / IEEE 802.11a Base mode / CH High **Test Date:** July 6, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 52% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	19.29	---	28.01	47.30	---	74.00	54.00	-6.70	Peak
10633.33	V	48.88	35.82	13.88	62.76	49.70	74.00	54.00	-4.30	AVG
N/A										
1700.00	H	18.77	---	28.01	46.78	---	74.00	54.00	-7.22	Peak
10633.33	H	49.24	37.26	13.88	63.12	51.14	74.00	54.00	-2.86	AVG
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX IEEE 802.11a Turbo mode / CH Low **Test Date:** July 7, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 51% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	18.84	---	28.01	46.85	---	74.00	54.00	-7.15	Peak
10416.67	V	46.11	33.45	13.25	59.36	46.70	74.00	54.00	-7.30	AVG
N/A										
1700.00	H	18.75	---	28.01	46.76	---	74.00	54.00	-7.24	Peak
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX IEEE 802.11a Turbo mode / CH Mid **Test Date:** July 7, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 51% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	18.85	---	28.01	46.86	---	74.00	54.00	-7.14	Peak
10500.00	V	46.81	33.59	13.69	60.50	47.28	74.00	54.00	-6.72	AVG
N/A										
1700.00	H	18.37	---	28.01	46.38	---	74.00	54.00	-7.62	Peak
10516.67	H	47.07	33.76	13.71	60.78	47.47	74.00	54.00	-6.53	AVG
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX IEEE 802.11a Turbo mode / CH High **Test Date:** July 7, 2006**Temperature:** 24°C**Tested by:** James Yu**Humidity:** 51% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1700.00	V	18.55	---	28.01	46.56	---	74.00	54.00	-7.44	Peak
10583.33	V	45.60	33.10	13.81	59.41	46.91	74.00	54.00	-7.09	AVG
N/A										
1700.00	H	18.99	---	28.01	47.00	---	74.00	54.00	-7.00	Peak
10583.33	H	45.36	33.28	13.81	59.17	47.09	74.00	54.00	-6.91	AVG
N/A										

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



## 7.3 TRANSMISSION IN ABSENCE OF DATA

### **LIMIT**

According to §15.407(c), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

### **TEST RESULTS**

*No non-compliance noted*

**Remark:** *For the details, please refer to the theory of the operation.*

## 7.4 FREQUENCY STABILITY

### **LIMIT**

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### **TEST RESULTS**

*Please refer to the theory of the operation for further details.*

**Remark:** *An examination of the band-edge plots shows that the emission will stay within the authorized band over the entire temperature range.*