FCC TEST REPORT

REPORT NO.: RF930507H06
MODEL NO.: BR5811b, BR5811bE
RECEIVED: May 07, 2004
TESTED: May 14 to Jun. 24, 2004

APPLICANT: Microelectronics Technology Inc.

ADDRESS: 1, Innovation Road II,Hsinchu Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

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1. CERTIFICATION

PRODUCT :	802.11a Outdoor Bridge With Internal Antenna, 802.11a Outdoor Bridge With External Antenna
BRAND NAME :	MTI
MODEL NO. :	BR5811b, BR5811bE
TESTED:	May 14 to Jun. 24, 2004
APPLICANT :	Microelectronics Technology Inc.
TEST ITEM:	ENGINEERING SAMPLE
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-1992

The above equipment (Model: BR5811b) 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: Amanda Chu , **DATE:** *Jun. 30, 2004*

(Amanda Chu)

APPROVED BY: , **DATE:** *Jun. 30, 2004*

(Eric Lin, Manager)

2. SUMMARY OF TEST RESULTS

for freq. 5.15~5.35GHz：

APPLIED STANDARD: 47 CFR Part 15, Subpart E			
Standard Section	**Test Type**	**Result**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -11.71dBuVat 0.341MHz
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 –0.70dBuV at 5457.00MHz
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

for freq. 5.725~5.850GHz：

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is-11.71dBuVat 0.341MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions FCC Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –3.6dBuV at 5350.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	NA	---

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11a Outdoor Bridge With Internal Antenna, 802.11a Outdoor Bridge With External Antenna
MODEL NO.	BR5811b, BR5811bE
POWER SUPPLY	48VDC from AC Adapter
MODULATION	OFDM(16QAM, 4QAM, QPSK, BPSK)
TRANSFER RATE	6 to 54Mbps (Turbo mode: up to 108Mbps *see note 1)
FREQUENCY RANGE	5.25~5.35GHz and 5.725~5.850GHz
NUMBER OF CHANNEL	802.11b and draft 802.11g: 11 802.11a: 9 for Normal mode / 3 for Turbo mode
CHANNEL SPACING	20MHz for Normal mode / 40MHz for Turbo mode
Max. OUTPUT POWER	19.63dBm(*see note 6)
DATA CABLE	NA
ANTENNA TYPE	See Note 3
I/O PORTS	RJ 45 Port x 1
ASSOCIATED DEVICES	NA

NOTE:

1. This EUT is capable of providing data rates of up to 108Mbps in Turbo Mode depending upon reception quality.

2. The EUT has two model names which are identical to each other in all aspects except for the followings:

Brand Name	Model Name	Product Name	Description
MTI	BR5811b	802.11a Outdoor Bridge With Internal Antenna	Internal Antenna
	BR5811bE	802.11a Outdoor Bridge With External Antenna	External Antenna

3. There are three antennas provided to this EUT, please refer to the following table:

No.	Model No.	Gain (dBi)	Antenna Type	Antenna Connector
1	ANT05535	17.0dBi	Directional, Patch Panel (Internal Antenna)	Probe Pin
2	R0420-058	8.0dBi	Dipole, Omni (External Antenna)	N (Plug)
3	MTI09009 (4C10021)	23.0dBi	Directional, Patch Panel (External Antenna)	N (Jack)

4. Frequency Range of each Antennas are as followings:

Antenna No.	Frequency Range
No. 1	5.725GHz ~ 5.850GHz (ISM Band)
No. 2	5.25GHz~5.35GHz (UNII)
No. 3	5.725GHz ~ 5.850GHz (ISM Band)

5. The EUT was powered by the following adapter:

Brand:	MICROELECTRONICS TECH. INC.
Model No.:	TR60A-POE-L(0640-0086)
Input power :	INPUT: 100-240V~ 1.5A 47-63Hz
Output power :	OUTPUT: 48V, 1.2A

6. Peak output power (Unit : dBm) :

No.	Model No.	Operating Frequency (MHz)	
		5250~5350	5725~5850
1	ANT05535	NA	14.03
2	R0420-058	19.63	NA
3	MTI09009 (4C10021)	NA	15.72

7. 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

Channel 5 to 13 are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
1	5180 MHz	8	5320 MHz
2	5200 MHz	9	5745MHz
3	5220 MHz	10	5765MHz
4	5240 MHz	11	5785MHz
5	5260 MHz	12	5805MHz
6	5280 MHz	13	5825MHz
7	5300 MHz		

Channel 3-5 are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
1	5210 MHz	4	5760MHz
2	5250 MHz	5	5800MHz
3	5290 MHz		

NOTE:

1..The EUT was tested in both normal mode (channel bandwidth of approximately 20MHz) and turbo mode (channel bandwidth of approximately 40MHz).

2. “Normal Mode” allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).

3. “Turbo Mode” allows data rates of up to 108Mbps. At data rates higher than 12Mbps the PA gain is reduced to improve signal fidelity. The device was, therefore, tested in turbo mode at the data rate that produced the highest output power for turbo mode (12Mbps).

4. For Antenna 1 & 3: Channel 9, 11 and 13 are the closest frequencies to the band edge, were chosen for final test of Normal Mode. Channel 4 & 5 were chosen for final test of turbo mode.

5. For Antenna 2: Channel 5 & 8 are the closest frequencies to the band edge, were chosen for final test of Normal Mode. Channel 3 were chosen for final test of turbo mode.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11a Outdoor Bridge With Internal Antenna According to the specifications of the manufacturer; it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 1992

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

NOTE: The EUT is also considered as a kind of computer peripheral. It has been verified to comply with the requirements of 47CFR Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

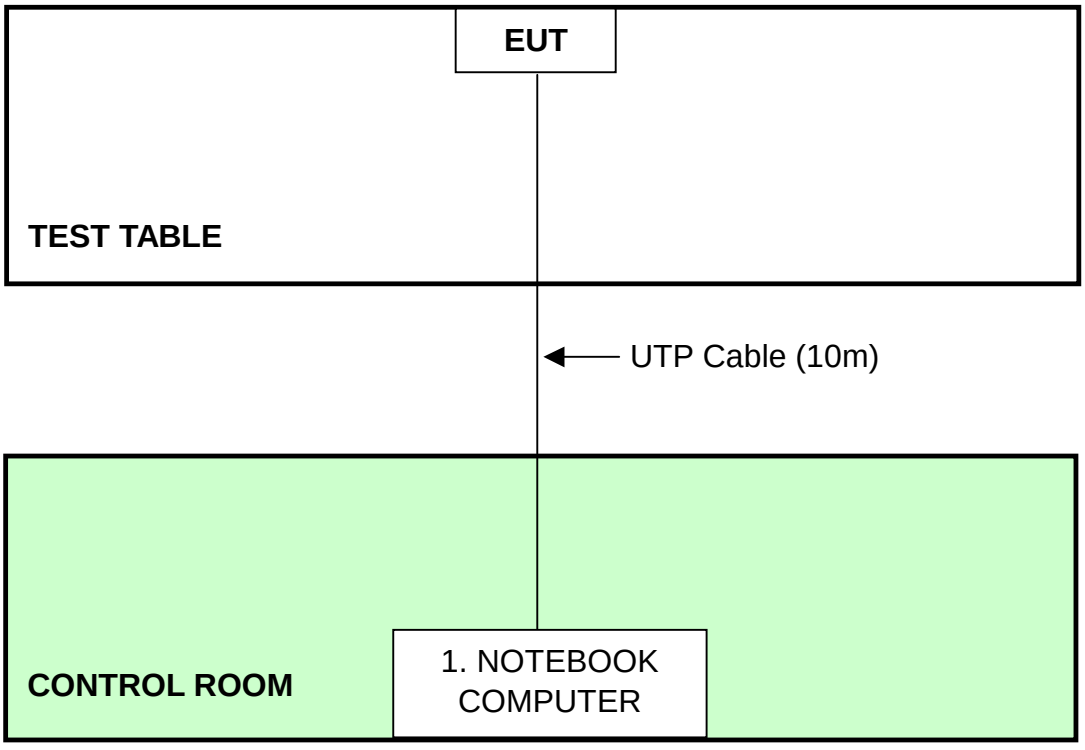
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	C600	6DRV601	FCC DoC

No.	Signal cable description
1	NA

Note: 1. All power cords of the above support units are unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Support unit 1 was kept in the control room during the test.

2. Please refer to the photos of test configuration in Item 6 also.

4. TEST TYPES AND RESULTS (FOR PART 802.11a)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 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
ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Dec. 04, 2004
ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 04, 2004
KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 27, 2004
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 03, 2004
Terminator(for KYORITSU)	50	3	May 10, 2005
Software	Cond-V2e	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 ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.

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.

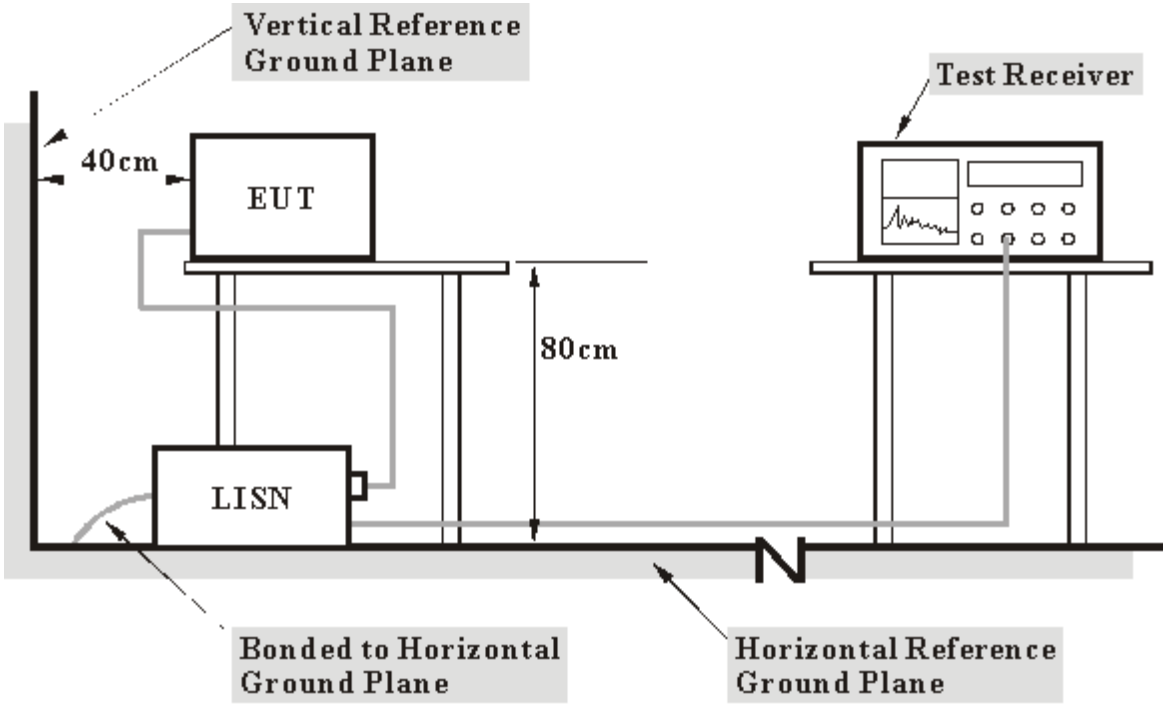
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

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

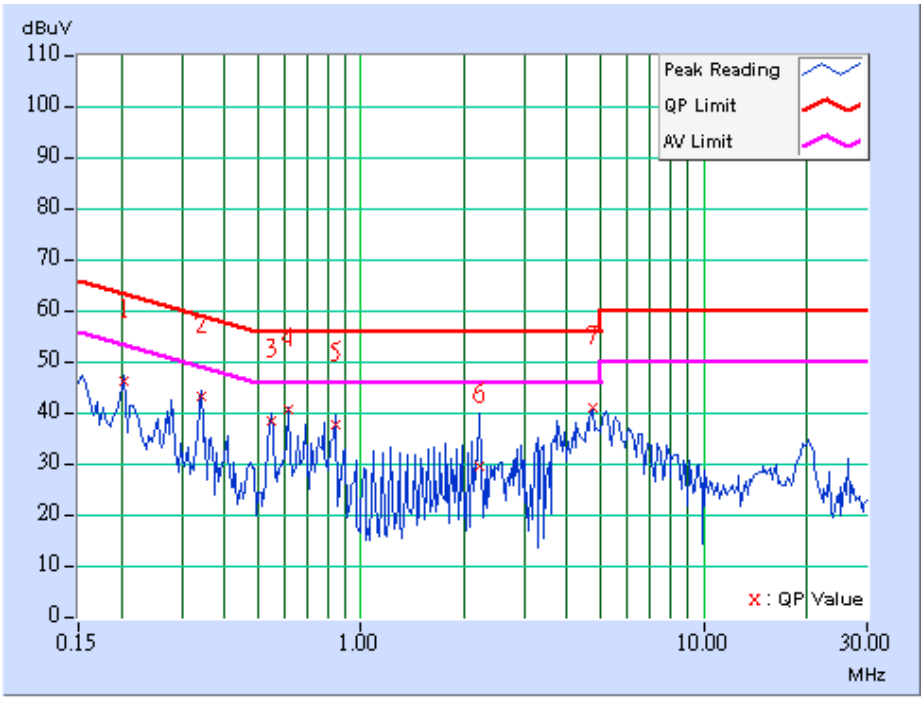
a. Placed the EUT on the testing table.
b. Prepared another computer system to act as a communication partner and placed it outside of testing area.
c. The communication partner run a test program “ART 485” to enable EUT under transmission/receiving condition continuously at specific channel frequency via RJ 45 cable and wireless.
d. The communication partner sent data to EUT by command "PING".

4.1.7 TEST RESULTS

EUT	802.11a Outdoor Bridge With Internal Antenna		
MODEL	BR5811b	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	27deg. C, 59%RH, 970 hPa	**TESTED BY**	Tony Chen
TEST MODE	802.11a		

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	0.205	0.30	45.81	-	46.11	-	63.42	53.42	-17.31	-
2	0.341	0.23	42.93	-	43.16	-	59.17	49.17	-16.01	-
3	0.548	0.22	37.93	-	38.15	-	56.00	46.00	-17.85	-
4	0.615	0.24	40.40	-	40.64	-	56.00	46.00	-15.36	-
5	0.841	0.27	37.28	-	37.55	-	56.00	46.00	-18.45	-
6	2.220	0.31	29.11	-	29.42	-	56.00	46.00	-26.58	-
7	4.773	0.45	40.56	-	41.01	-	56.00	46.00	-14.99	-

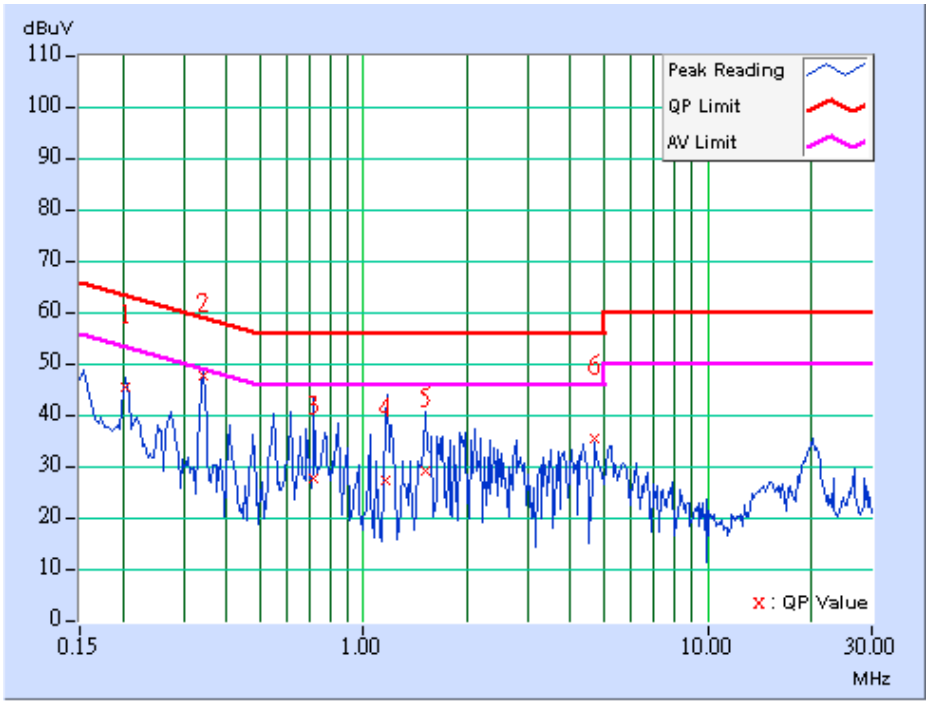
NOTES: (1) "*": Undetectable
(2) Q.P. and AV. are abbreviations of quasi-peak and average.
(3) "-": The Quasi-peak reading value also meets an average limit, thus measurement with the average detector is unnecessary.
(4) The emission levels of other frequencies were very low against the limit.
(5) Correction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



EUT	802.11a Outdoor Bridge With Internal Antenna		
MODEL	BR5811b	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	27deg. C, 59%RH, 970 hPa	**TESTED BY**	Tony Chen
TEST MODE	802.11a		

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	0.205	0.30	45.13	-	45.43	-	63.42	53.42	-17.99	-
2	**0.341**	**0.23**	**47.23**	**-**	**47.46**	**-**	**59.17**	**49.17**	**-11.71**	**-**
3	0.720	0.25	27.52	-	27.77	-	56.00	46.00	-28.23	-
4	1.163	0.30	27.15	-	27.45	-	56.00	46.00	-28.55	-
5	1.505	0.30	28.82	-	29.12	-	56.00	46.00	-26.88	-
6	4.715	0.44	35.06	-	35.50	-	56.00	46.00	-20.50	-

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

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8594ER	3829U04676	Aug. 30, 2004
ADVANTEST Spectrum Analyzer	R3271A	85060311	Jun 16, 2005
CHASE RF Pre_Amplifier	CPA9232	1057	May. 10, 2005
HP Pre_Amplifier	8449B	3008A01922	Oct. 13, 2004
ROHDE & SCHWARZ Test Receiver	ESVS 10	849231 /019	Sep. 30, 2004
CHASE Broadband Antenna	CBL6111c	2730	Jul 30, 2004
Schwarzbeck Horn_Antenna	3115	5619	Jun 16, 2005
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170192	Feb. 16, 2005
SCHWARZBECK Tunable Dipole Antenna	UHAP	897	Mar. 07, 2005
SCHWARZBECK Tunable Dipole Antenna	VHAP	880	Mar. 07, 2005
RF Switches (ARNITSU)	CS-201	1565157	Dec. 01, 2004
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Feb. 10. 2005
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1 GHz-021	Dec. 01, 2004
Software	AS60P8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Tunable Dipole Antenna)and the calibrations are traceable to NML/ROC and NIST/USA.
2. * = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. C.
5. The FCC Site Registration No. is 656396.
6. The VCCI Site Registration No. is R-1626.
7. The CANADA Site Registration No. is IC 4824-3.

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 10 meter open area test site. 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 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

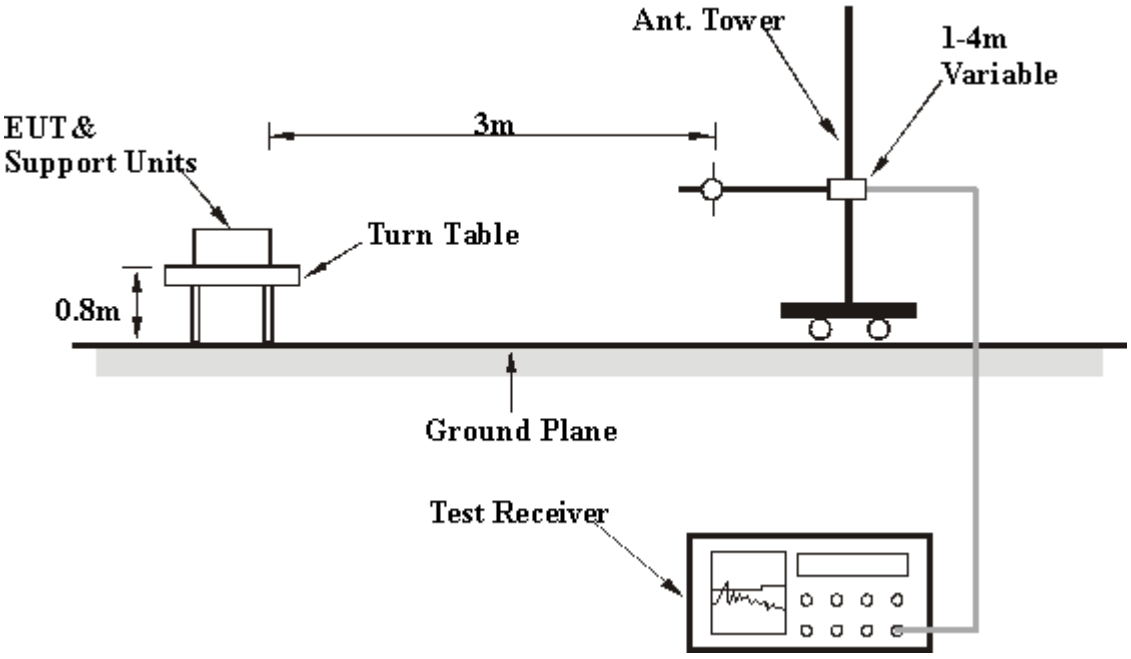
NOTE:

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 300 Hz 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 CONDITIONS

Same as 4.1.6.

4.2.8 TEST RESULTS (ANTENNA 1)

EUT	802.11a Outdoor Bridge With Internal Antenna		
MODEL	BR5811b	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
FREQUENCY RANGE	30- 1000MHz	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 55%RH, 970 hPa	**TESTED BY**	Tony Chen

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	124.99	28.90 QP	43.50	-14.60	1.76 H	233	16.80	12.10
2	159.99	20.80 QP	43.50	-22.70	1.59 H	323	6.40	14.40
3	199.99	21.80 QP	43.50	-21.70	2.03 H	304	10.60	11.20
4	320.00	21.40 QP	46.00	-24.60	2.52 H	92	5.60	15.80
5	440.00	27.30 QP	46.00	-18.70	2.07 H	267	8.20	19.10
6	520.02	28.10 QP	46.00	-17.90	2.14 H	2	6.90	21.30
7	600.02	30.50 QP	46.00	-15.50	1.92 H	3	7.50	23.00
8	720.02	32.90 QP	46.00	-13.10	1.43 H	170	8.10	24.80
9	800.02	34.10 QP	46.00	-11.90	1.23 H	217	7.90	26.20
10	920.02	36.70 QP	46.00	-9.30	1.00 H	80	8.70	27.90

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	125.00	31.30 QP	43.50	-12.20	1.00 V	226	19.20	12.10
2	200.01	23.90 QP	43.50	-19.60	1.00 V	282	12.70	11.20
3	250.01	26.90 QP	46.00	-19.10	1.00 V	139	13.60	13.20
4	375.01	28.80 QP	46.00	-17.20	1.00 V	172	11.40	17.40
5	400.01	24.60 QP	46.00	-21.40	1.00 V	22	6.40	18.10
6	560.02	27.40 QP	46.00	-18.60	1.48 V	280	5.40	22.00
7	600.01	29.30 QP	46.00	-16.70	1.51 V	322	6.30	23.00
8	720.01	32.00 QP	46.00	-14.00	1.80 V	227	7.10	24.80
9	800.02	34.00 QP	46.00	-12.00	1.64 V	74	7.80	26.20
10	880.02	35.80 QP	46.00	-10.20	2.10 V	350	8.30	27.60

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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 1)

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
MODE	Normal Mode	**CHANNEL**	9
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5440.00	45.20 PK	74.00	-28.80	1.40 H	11	8.20	37.00
2	*5745.00	101.40 PK			1.00 H	303	63.80	37.60
2	*5745.00	93.20 AV			1.00 H	303	55.70	37.60
3	#11490.00	56.70 PK	74.00	-17.30	1.00 H	38	5.40	51.30
3	#11490.00	45.60 AV	54.00	-8.40	1.00 H	38	-5.70	51.30
4	17235.00	57.30 PK	68.30	-11.00	1.00 H	0	5.60	51.70

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	#5440.00	64.10 PK	74.00	-9.90	1.17 V	0	27.10	37.00
1	#5440.00	53.10 AV	54.00	-0.90	1.17 V	0	16.10	37.00
2	*5745.00	118.70 PK			1.27 V	356	81.20	37.60
2	*5745.00	109.00 AV			1.27 V	356	71.40	37.60
3	#11490.00	59.70 PK	74.00	-14.30	1.38 V	0	8.40	51.30
3	#11490.00	47.70 AV	54.00	-6.30	1.38 V	0	-3.60	51.30
4	17235.00	57.90 PK	68.30	-10.40	1.33 V	326	6.20	51.70

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

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STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
MODE	Normal Mode	**CHANNEL**	11
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5436.00	45.00 PK	74.00	-29.00	1.41 H	13	8.00	37.00
2	*5785.00			21.70	1.00 H	301	62.40	37.60
2	*5785.00			37.20	1.00 H	301	53.60	37.60
3	#11570.00	56.30 PK	74.00	-17.70	1.01 H	35	5.20	51.10
3	#11570.00	45.60 AV	54.00	-8.40	1.01 H	35	-5.50	51.10
4	17355.00	58.50 PK	68.30	-9.80	1.05 H	37	5.60	52.90

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	#5436.00	63.80 PK	74.00	-10.20	1.16 V	355	26.70	37.00
1	#5436.00	52.80 AV	54.00	-1.20	1.16 V	355	15.80	37.00
2	*5785.00	115.60 PK			1.27 V	355	78.00	37.60
2	*5785.00	107.10 AV			1.27 V	355	69.50	37.60
3	#11570.00	58.50 PK	74.00	-15.50	1.37 V	12	7.40	51.10
3	#11570.00	47.40 AV	54.00	-6.60	1.37 V	12	-3.70	51.10
4	17355.00	59.20 PK	68.30	-9.10	1.26 V	335	6.20	52.90

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
MODE	Normal Mode	**CHANNEL**	13
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5400.00	45.00 PK	74.00	-29.00	1.38 H	15	8.00	37.00
2	*5825.00	99.20 PK			1.00 H	298	61.40	37.70
2	*5825.00	90.70 AV			1.00 H	298	53.00	37.70
3	#11650.00	56.40 PK	74.00	-17.60	1.00 H	19	5.50	50.80
3	#11650.00	45.30 AV	54.00	-8.70	1.00 H	19	-5.60	50.80
4	17475.00	60.40 PK	68.30	-7.90	1.00 H	0	6.20	54.20

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	#5400.00	61.90 PK	74.00	-12.10	1.10 V	358	24.80	37.00
1	#5400.00	50.50 AV	54.00	-3.50	1.10 V	358	13.50	37.00
2	*5825.00	114.70 PK			1.26 V	356	77.00	37.70
2	*5825.00	106.50 AV			1.26 V	356	68.80	37.70
3	#11650.00	58.70 PK	74.00	-15.30	1.36 V	322	7.90	50.80
3	#11650.00	47.20 AV	54.00	-6.80	1.36 V	322	-3.60	50.80
4	17475.00	60.60 PK	68.30	-7.70	1.28 V	355	6.50	54.20

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
MODE	Turbo Mode	**CHANNEL**	4
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5400.00	45.20 PK	74.00	-28.80	1.39 H	13	8.20	37.00
2	*5760.00	97.00 PK			1.00 H	300	59.40	37.60
2	*5760.00	88.80 AV			1.00 H	300	51.20	37.60
3	#11520.00	57.10 PK	74.00	-16.90	1.05 H	31	5.80	51.30
3	#11520.00	45.80 AV	54.00	-8.20	1.05 H	31	-5.50	51.30
4	17280.00	57.80 PK	68.30	-10.50	1.10 H	12	5.70	52.20

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	#5400.00	63.00 PK	74.00	-11.00	1.12 V	1	26.00	37.00
1	#5400.00	52.70 AV	54.00	-1.30	1.12 V	1	15.60	37.00
2	*5760.00	113.00 PK			1.36 V	356	75.40	37.60
2	*5760.00	105.00 AV			1.36 V	356	67.40	37.60
3	#11520.00	59.60 PK	74.00	-14.40	1.40 V	11	8.30	51.30
3	#11520.00	47.70 AV	54.00	-6.30	1.40 V	11	-3.50	51.30
4	17280.00	58.50 PK	68.30	-9.80	1.22 V	315	6.30	52.20

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
MODE	Turbo Mode	**CHANNEL**	5
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5373.00	45.20 PK	74.00	-28.80	1.33 H	21	8.10	37.00
2	*5800.00	95.20 PK			1.00 H	308	57.50	37.70
2	*5800.00	87.40 AV			1.00 H	308	49.70	37.70
3	#11600.00	56.70 PK	74.00	-17.30	1.03 H	30	5.70	51.00
3	#11600.00	46.00 AV	54.00	-8.00	1.03 H	30	-5.00	51.00
4	17400.00	58.80 PK	68.30	-9.50	1.07 H	15	5.40	53.40

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	#5373.00	64.00 PK	74.00	-10.00	1.20 V	358	27.00	37.00
1	#5373.00	52.40 AV	54.00	-1.60	1.20 V	358	15.30	37.00
2	*5800.00	111.90 PK			1.18 V	358	74.20	37.70
2	*5800.00	103.30 AV			1.18 V	358	65.60	37.70
3	#11600.00	59.20 PK	74.00	-14.80	1.41 V	13	8.20	51.00
3	#11600.00	47.80 AV	54.00	-6.20	1.41 V	13	-3.20	51.00
4	17400.00	59.70 PK	68.30	-8.60	1.26 V	311	6.30	53.40

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

4.2.10 TEST RESULTS (ANTENNA 2)

EUT	802.11a Outdoor Bridge With External Antenna		
MODEL	BR5811bE	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
FREQUENCY RANGE	30- 1000MHz	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 55%RH, 970 hPa	**TESTED BY**	Tony Chen

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	125.00	26.90 QP	43.50	-16.60	1.65 H	10	14.80	12.10
2	200.01	25.00 QP	43.50	-18.50	1.98 H	139	13.80	11.20
3	250.01	24.90 QP	46.00	-21.10	1.75 H	178	11.70	13.20
4	375.01	25.90 QP	46.00	-20.10	1.00 H	168	8.50	17.40
5	400.01	23.90 QP	46.00	-22.10	1.50 H	6	5.80	18.10
6	500.01	27.60 QP	46.00	-18.40	1.72 H	38	6.70	21.00
7	560.01	29.30 QP	46.00	-16.70	1.53 H	29	7.20	22.00
8	600.01	30.50 QP	46.00	-15.50	1.14 H	244	7.50	23.00
9	720.01	31.80 QP	46.00	-14.20	1.45 H	171	6.90	24.80
10	880.01	33.90 QP	46.00	-12.10	1.00 H	292	6.30	27.60

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	42.10	31.50 QP	40.00	-8.50	1.00 V	284	19.10	12.40
2	68.06	32.10 QP	40.00	-7.90	1.00 V	343	20.60	11.50
3	125.01	31.00 QP	43.50	-12.50	1.00 V	130	18.80	12.10
4	200.00	23.50 QP	43.50	-20.00	1.00 V	89	12.30	11.20
5	250.01	27.10 QP	46.00	-18.90	1.00 V	211	13.90	13.20
6	400.00	24.80 QP	46.00	-21.20	1.00 V	346	6.70	18.10
7	440.01	27.10 QP	46.00	-18.90	1.00 V	113	8.00	19.10
8	600.01	29.10 QP	46.00	-16.90	1.54 V	219	6.10	23.00
9	719.98	32.70 QP	46.00	-13.30	1.83 V	49	7.90	24.80
10	800.03	34.10 QP	46.00	-11.90	1.39 V	329	7.90	26.20

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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.

STANDARD SECTION 15.407

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal Mode	**CHANNEL**	5
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 970 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	*5260.00	90.40 PK			1.05 H	314	53.40	37.00
1	*5260.00	81.80 AV			1.05 H	314	44.80	37.00
2	10520.00	50.10 PK	68.30	-18.20	1.51 H	308	5.00	45.20
3	#15780.00	52.40 PK	74.00	-21.60	1.25 H	316	4.60	47.90
3	#15780.00	40.00 AV	54.00	-14.00	1.25 H	316	-7.90	47.90

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	*5260.00	108.90 PK			1.49 V	5	71.90	37.00
1	*5260.00	104.20 AV			1.49 V	5	67.20	37.00
2	10520.00	48.10 PK	68.30	-20.20	1.67 V	11	2.90	45.20
3	#15780.00	51.40 PK	74.00	-22.60	1.22 V	336	3.50	47.90
3	#15780.00	40.10 AV	54.00	-13.90	1.22 V	336	-7.70	47.90

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.407

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal Mode	**CHANNEL**	8
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 970 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	*5320.00	91.90 PK			1.56 H	259	54.80	37.00
1	*5320.00	83.10 AV			1.56 H	259	46.10	37.00
2	#5350.00	38.90 PK	74.00	-35.10	1.57 H	260	1.80	37.00
3	#10640.00	50.00 PK	74.00	-24.00	1.54 H	306	3.70	46.30
4	#15960.00	48.40 PK	74.00	-25.60	1.57 H	300	1.10	47.30

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	*5320.00	112.60 PK			1.41 V	20	75.50	37.00
1	*5320.00	103.00 AV			1.41 V	20	66.00	37.00
2	#5350.00	59.50 PK	74.00	-14.50	1.42 V	21	22.50	37.00
2	#5350.00	50.00 AV	54.00	-4.00	1.42 V	21	13.00	37.00
3	#10640.00	48.40 PK	74.00	-25.60	1.72 V	324	2.10	46.30
4	#15960.00	48.90 PK	74.00	-25.10	1.43 V	289	1.60	47.30

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.407

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo Mode	**CHANNEL**	3
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 970 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	*5290.00	87.70 PK			1.74 H	270	50.70	37.00
1	*5290.00	79.30 AV			1.74 H	270	42.20	37.00
2	#5350.00	36.80 PK	74.00	-37.20	1.75 H	27	-0.20	37.00
3	10580.00	47.00 PK	68.30	-21.30	1.27 H	316	1.20	45.70
4	#15870.00	50.70 PK	74.00	-23.30	1.15 H	326	3.10	47.60

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	*5290.00	110.40 PK			1.52 V	4	73.30	37.00
1	*5290.00	101.20 AV			1.52 V	4	64.20	37.00
2	#5350.00	59.50 PK	74.00	-14.50	1.53 V	5	22.40	37.00
2	**#5350.00**	**50.40 AV**	**54.00**	**-3.60**	**1.53 V**	**5**	**13.30**	**37.00**
3	10580.00	47.10 PK	68.30	-21.20	1.45 V	313	1.40	45.70
4	#15870.00	51.60 PK	74.00	-22.40	1.11 V	318	4.00	47.60
4	#15870.00	39.70 AV	54.00	-14.30	1.11 V	318	-7.90	47.60

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

4.2.11 TEST RESULTS (ANTENNA 3)

EUT	802.11a Outdoor Bridge With External Antenna		
MODEL	BR5811bE	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
FREQUENCY RANGE	30- 1000MHz	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 55%RH, 970 hPa	**TESTED BY**	Tony Chen

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	125.00	27.10 QP	43.50	-16.40	1.91 H	16	15.00	12.10
2	160.00	20.10 QP	43.50	-23.40	2.16 H	16	5.70	14.40
3	200.00	21.30 QP	43.50	-22.20	1.89 H	348	10.00	11.20
4	250.00	24.80 QP	46.00	-21.20	1.55 H	277	11.60	13.20
5	375.00	25.00 QP	46.00	-21.00	1.41 H	95	7.60	17.40
6	400.00	25.20 QP	46.00	-20.80	1.62 H	149	7.10	18.10
7	480.00	24.80 QP	46.00	-21.20	2.05 H	325	4.50	20.30
8	600.00	28.60 QP	46.00	-17.40	1.64 H	110	5.60	23.00
9	720.00	32.40 QP	46.00	-13.60	1.34 H	276	7.50	24.80
10	880.00	35.60 QP	46.00	-10.40	1.00 H	126	8.10	27.60

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	47.26	30.90 QP	40.00	-9.10	1.00 V	124	18.70	12.30
2	72.78	29.30 QP	40.00	-10.70	1.00 V	49	18.00	11.30
3	125.00	32.40 QP	43.50	-11.10	1.00 V	102	20.20	12.10
4	199.99	26.60 QP	43.50	-16.90	1.00 V	8	15.40	11.20
5	250.01	25.50 QP	46.00	-20.50	1.00 V	303	12.20	13.20
6	374.97	26.90 QP	46.00	-19.10	1.00 V	205	9.50	17.40
7	399.99	25.70 QP	46.00	-20.30	1.00 V	62	7.60	18.10
8	599.99	30.30 QP	46.00	-15.70	1.98 V	0	7.30	23.00
9	720.00	32.40 QP	46.00	-13.60	1.00 V	280	7.50	24.80
10	880.00	35.00 QP	46.00	-11.00	1.79 V	204	7.40	27.60

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal Mode	**CHANNEL**	9
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5457.00	50.80 PK	74.00	-23.20	1.51 H	50	13.80	37.00
2	*5745.00	105.00 PK			1.63 H	69	67.40	37.60
2	*5745.00	97.20 AV			1.63 H	69	59.70	37.60
3	#11490.00	58.50 PK	74.00	-15.50	1.58 H	312	7.20	51.30
3	#11490.00	47.50 AV	54.00	-6.50	1.58 H	312	-3.80	51.30
4	17235.00	59.30 PK	68.30	-9.00	1.26 H	32	7.60	51.70

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	#5457.00	64.30 PK	74.00	-9.70	1.18 V	3	27.30	37.00
1	**#5457.00**	**53.30 AV**	**54.00**	**-0.70**	**1.18 V**	**3**	**16.30**	**37.00**
2	*5745.00	122.40 PK			1.13 V	2	84.80	37.60
2	*5745.00	114.00 AV			1.13 V	2	76.40	37.60
3	#11490.00	58.20 PK	74.00	-15.80	1.29 V	341	6.90	51.30
3	#11490.00	48.20 AV	54.00	-5.80	1.29 V	341	-3.10	51.30
4	17235.00	59.30 PK	68.30	-9.00	1.26 V	31	7.60	51.70

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

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STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal Mode	**CHANNEL**	11
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5458.00	49.60 PK	74.00	-24.40	1.48 H	315	12.60	37.00
2	*5785.00	103.10 PK			1.54 H	65	65.50	37.60
2	*5785.00	95.40 AV			1.54 H	65	57.70	37.60
3	#11570.00	57.90 PK	74.00	-16.10	1.40 H	28	6.70	51.10
3	#11570.00	46.70 AV	54.00	-7.30	1.40 H	28	-4.40	51.10
4	17355.00	59.50 PK	68.30	-8.80	1.23 H	44	6.50	52.90

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	#5458.00	63.30 PK	74.00	-10.70	1.29 V	0	26.30	37.00
1	#5458.00	52.40 AV	54.00	-1.60	1.29 V	0	15.40	37.00
2	*5785.00	121.70 PK			1.10 V	4	84.10	37.60
2	*5785.00	112.80 AV			1.10 V	4	75.20	37.60
3	#11570.00	58.90 PK	74.00	-15.10	1.33 V	79	7.80	51.10
3	#11570.00	48.20 AV	54.00	-5.80	1.33 V	79	-2.90	51.10
4	17355.00	59.80 PK	68.30	-8.50	1.16 V	146	6.90	52.90

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal Mode	**CHANNEL**	13
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5458.00	50.30 PK	74.00	-23.70	1.00 H	217	13.30	37.00
2	*5825.00	102.70 PK			1.60 H	68	65.00	37.70
2	*5825.00	94.30 AV			1.60 H	68	56.50	37.70
3	#11650.00	58.40 PK	74.00	-15.60	1.63 H	218	7.60	50.80
3	#11650.00	47.70 AV	54.00	-6.30	1.63 H	218	-3.10	50.80
4	17475.00	61.30 PK	68.30	-7.00	1.56 H	56	7.20	54.20

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	#5458.00	62.80 PK	74.00	-11.20	1.14 V	3	25.80	37.00
1	#5458.00	52.80 AV	54.00	-1.20	1.14 V	3	15.70	37.00
2	*5825.00	120.30 PK			1.22 V	2	82.50	37.70
2	*5825.00	111.60 AV			1.22 V	2	73.90	37.70
3	#11650.00	59.70 PK	74.00	-14.30	1.12 V	315	8.80	50.80
3	#11650.00	48.20 AV	54.00	-5.80	1.12 V	315	-2.60	50.80
4	17475.00	62.20 PK	68.30	-6.10	1.28 V	63	8.10	54.20

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "# " : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo Mode	**CHANNEL**	4
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5440.00	50.40 PK	74.00	-23.60	1.06 H	223	13.30	37.00
2	*5760.00	99.40 PK			1.52 H	63	61.80	37.60
2	*5760.00	91.00 AV			1.52 H	63	53.40	37.60
3	#11520.00	48.10 PK	74.00	-25.90	1.36 H	315	-3.20	51.30
4	17280.00	59.10 PK	68.30	-9.20	1.20 H	108	7.00	52.20

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	#5440.00	63.20 PK	74.00	-10.80	1.06 V	4	26.20	37.00
1	#5440.00	52.70 AV	54.00	-1.30	1.06 V	4	15.70	37.00
2	*5760.00	117.30 PK			1.17 V	4	79.80	37.60
2	*5760.00	109.50 AV			1.17 V	4	71.90	37.60
3	#11520.00	59.50 PK	74.00	-14.50	1.15 V	337	8.20	51.30
3	#11520.00	48.00 AV	54.00	-6.00	1.15 V	337	-3.30	51.30
4	17280.00	60.20 PK	68.30	-8.10	1.28 V	216	8.00	52.20

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

STANDARD SECTION 15.247

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo Mode	**CHANNEL**	5
FREQUENCY RANGE	1000MHz~40000MHz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 55%RH, 969 hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Tony Chen		

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	#5450.00	50.90 PK	74.00	-23.10	1.17 H	316	13.80	37.00
2	*5800.00	99.30 PK			1.62 H	71	61.70	37.70
2	*5800.00	90.80 AV			1.62 H	71	53.20	37.70
3	#11600.00	58.60 PK	74.00	-15.40	1.12 H	32	7.60	51.00
3	#11600.00	47.70 AV	54.00	-6.30	1.12 H	32	-3.30	51.00
4	17400.00	60.40 PK	68.30	-7.90	1.38 H	127	7.00	53.40

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	#5450.00	64.00 PK	74.00	-10.00	1.26 V	2	27.00	37.00
1	#5450.00	52.90 AV	54.00	-1.10	1.26 V	2	15.90	37.00
2	*5800.00	116.10 PK	78.30	37.80	1.12 V	1	78.40	37.70
2	*5800.00	108.30 AV	54.00	54.30	1.12 V	1	70.70	37.70
3	#11600.00	59.60 PK	74.00	-14.40	1.12 V	356	8.60	51.00
3	#11600.00	48.40 AV	54.00	-5.60	1.12 V	356	-2.60	51.00
4	17400.00	61.20 PK	68.30	-7.10	1.27 V	56	7.80	53.40

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

FOR FREQUENCY 5.15~5.35GHZ

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

Note:

1. Where B is the 26dB emission bandwidth in MHz.
2. Limit follows whichever is lower.
3. 5.15-5.25GHz: In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
4. 5.25-5.35GHz: In addition, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP30	100019	Dec. 19, 2004

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.

4.3.4 TEST SETUP

4.3.5 EUT OPERATING CONDITIONS

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

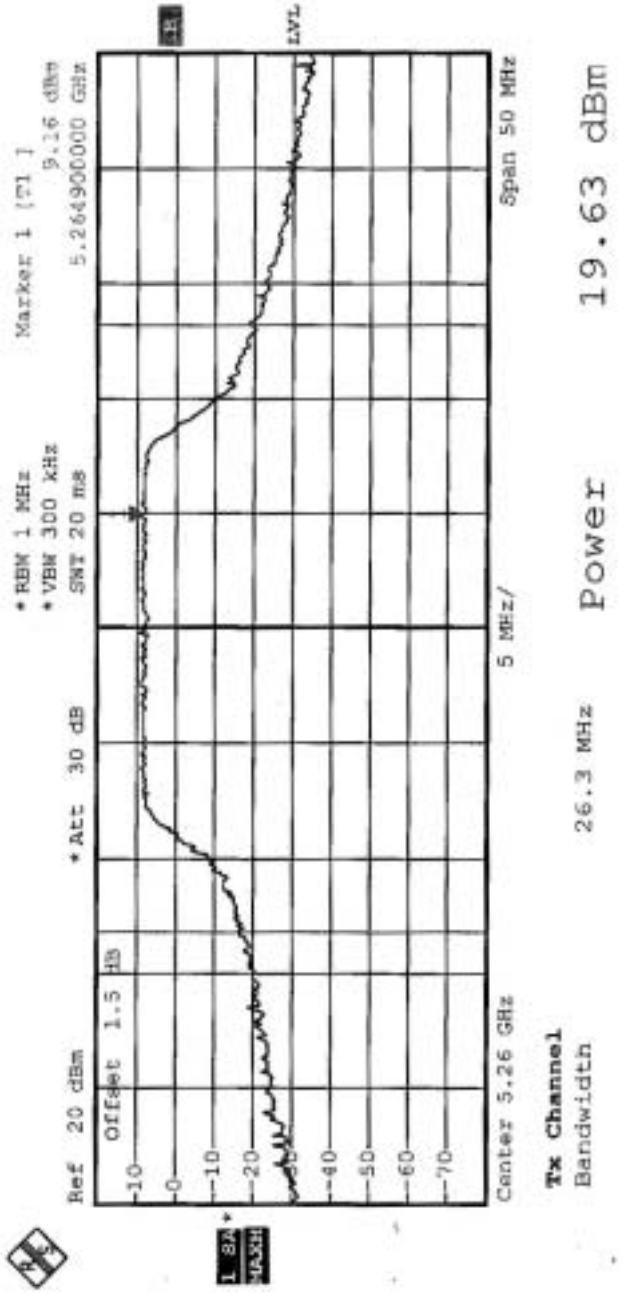
4.3.6 TEST RESULTS (ANTENNA 2)

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	28eg. C, 56RH, 970 hPa	**TESTED BY**	Tony Chen

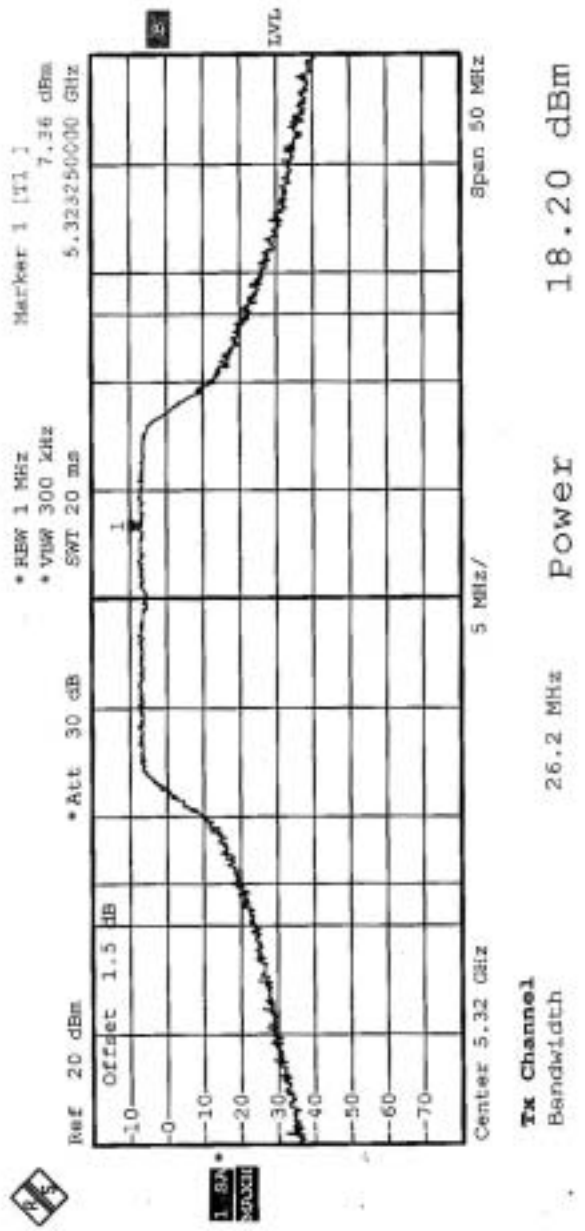
ANTENNA 2 (Gain 8 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
5	5260	19.63	24.00	26.3	PASS
8	5320	18.2	24.00	26.2	PASS

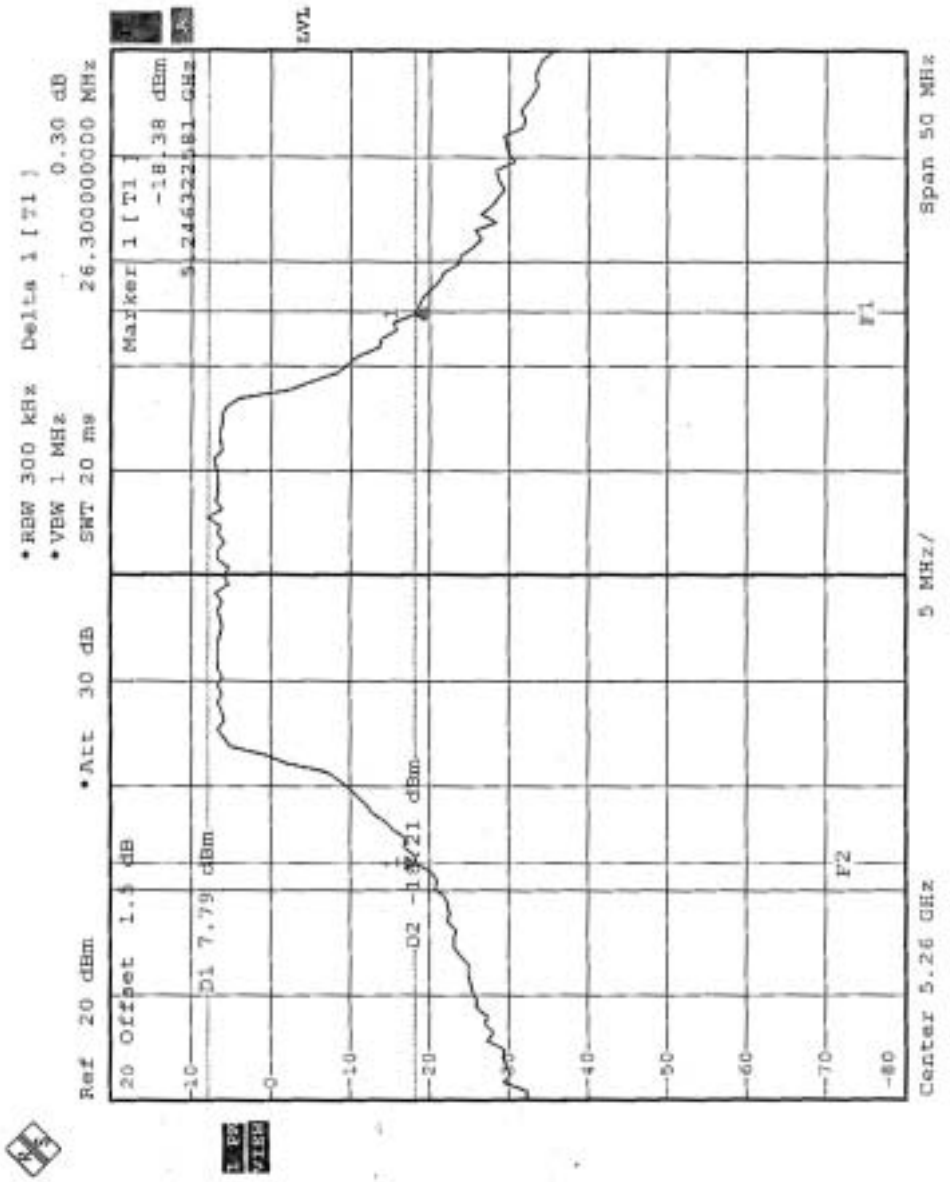
CHANNEL 5


Ref 20 dBm
Offset 1.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T1]
9.16 dBm
5.264900000 GHz
Center 5.26 GHz
5 MHz/
Span 50 MHz
Tx Channel
Bandwidth
26.3 MHz
Power
19.63 dBm

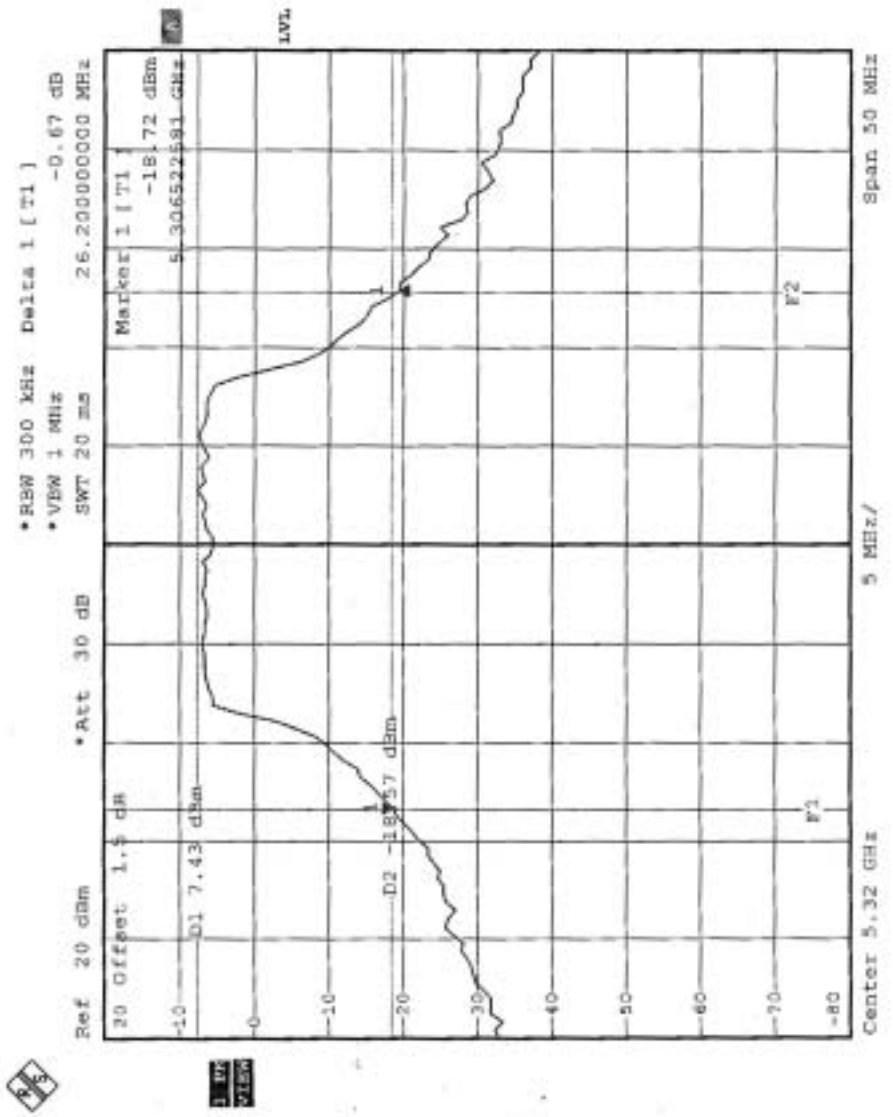
CHANNEL 8


Ref 20 dBm
Offset 1.5 dB
* Att 30 dB
* RBW 1 MHz
* VBW 300 kHz
SWT 20 ms
Marker 1 [T1]
7.36 dBm
5.323250000 GHz
Center 5.32 GHz
5 MHz/
Span 50 MHz
Tx Channel
Bandwidth
26.2 MHz
Power
18.20 dBm

CHANNEL 5


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
0.30 dB
26.30000000 MHz
Marker 1 [T1]
-18.38 dBm
5.24632581 GHz
Ref 20 dBm
Offset 1.5 dB
Att 30 dB
D1 7.79 dBm
D2 -1.21 dBm
F1
F2
Center 5.26 GHz
5 MHz/
Span 50 MHz

CHANNEL 8

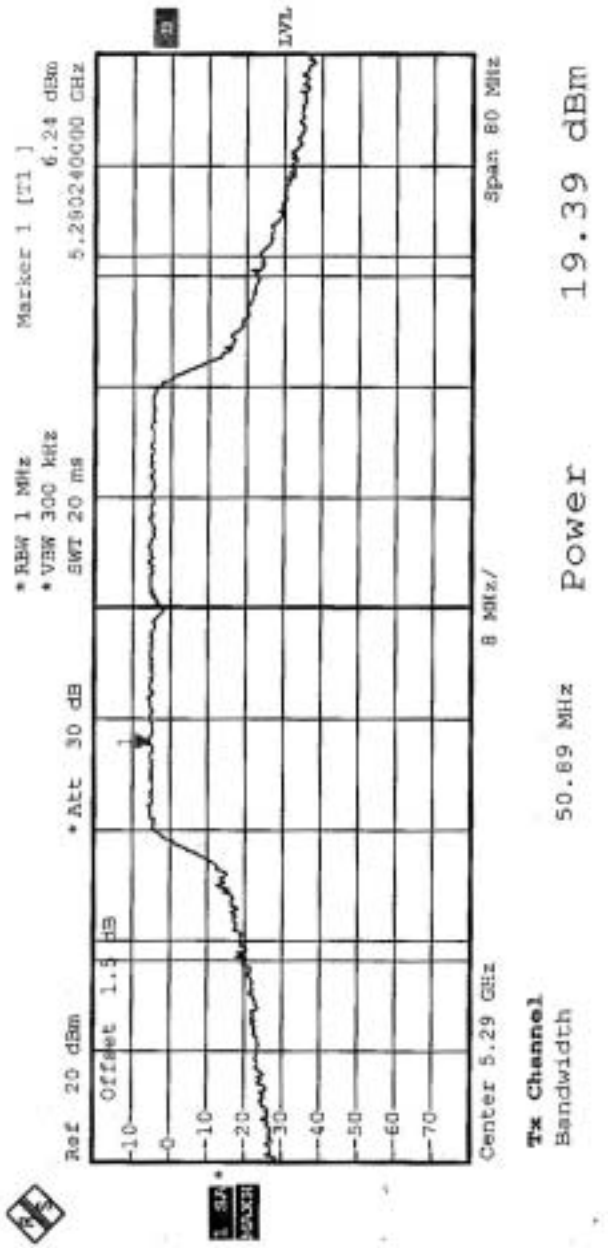

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
-0.67 dB
26.20000000 MHz
Marker 1 [T1]
-18.72 dBm
5.30652691 GHz
Att 30 dB
Ref 20 dBm
Offset 1.5 dB
D1 7.43 dBm
D2 -18.57 dBm
Span 50 MHz
5 MHz/
Center 5.32 GHz
LVL
F1
F2

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	28eg. C, 56RH, 970 hPa	**TESTED BY**	Tony Chen

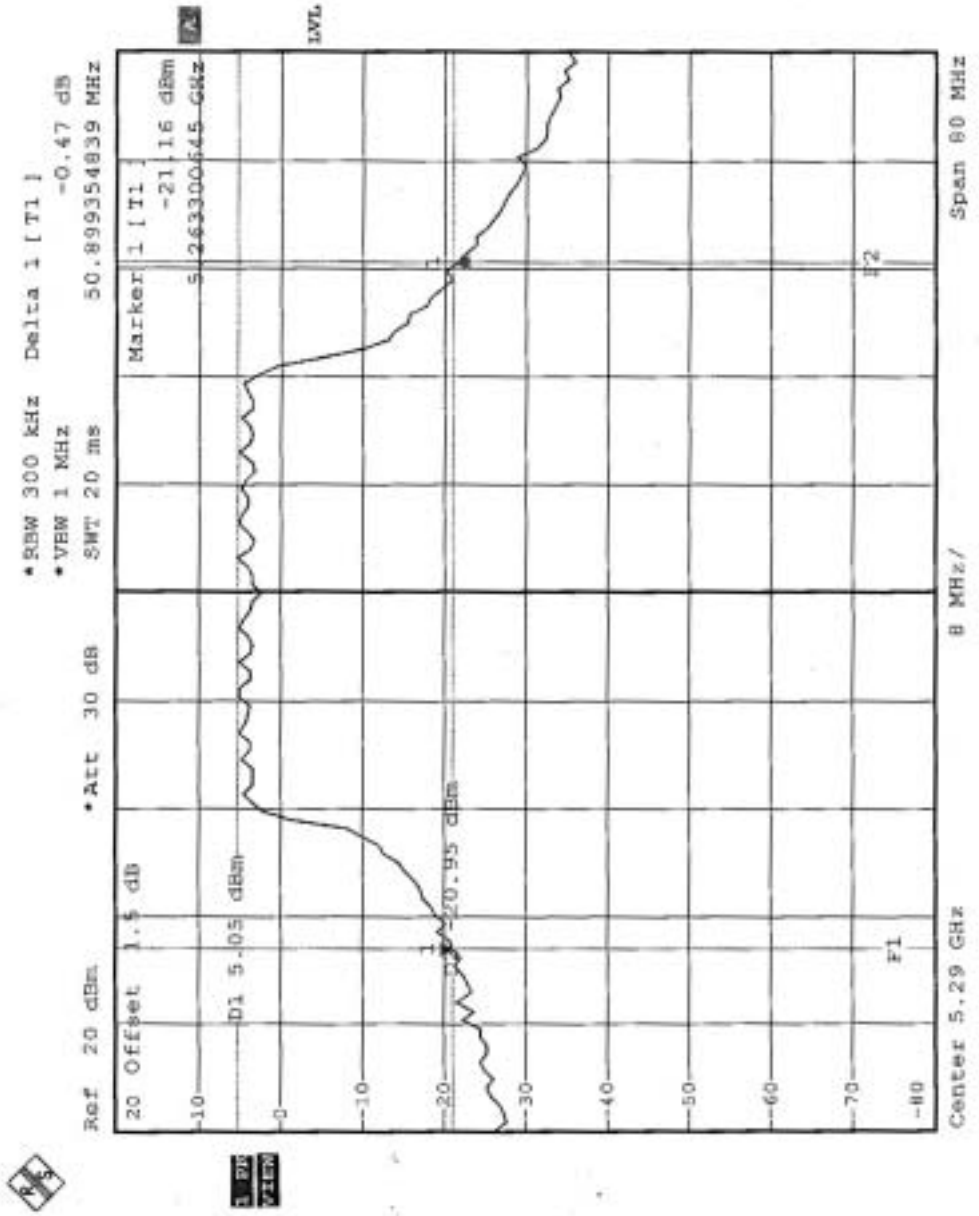
ANTENNA 2 (Gain 8 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
3	5290	19.39	24.00	50.89	PASS

CHANNEL 3


Marker 1 [T1]
6.24 dBm
5.260240000 GHz
* RBW 1 MHz
* VBW 300 kHz
SWT 20 ms
* Att 30 dB
Offset 1.5 dB
Ref 20 dBm
Center 5.29 GHz
8 MHz/
Span 80 MHz
Tx Channel
Bandwidth
50.89 MHz
Power
19.39 dBm

CHANNEL 3


Ref 20 dBm
20 Offset 1.5 dB
•Att 30 dB
•VBW 1 MHz
SWT 20 ms
•RBW 300 kHz
Delta 1 [T1]
-0.47 dB
50.899354839 MHz
Marker 1 [T1]
-21.16 dBm
5.263300645 GHz
D1 5.05 dBm
-20.95 dBm
Center 5.29 GHz
8 MHz/
Span 80 MHz
F1
F2
LVL

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
R&S SPECTRUM ANALYZER	FSP30	100019	Dec. 19, 2004

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

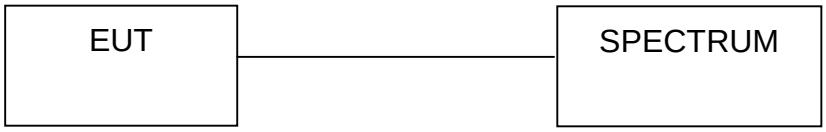
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set 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.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

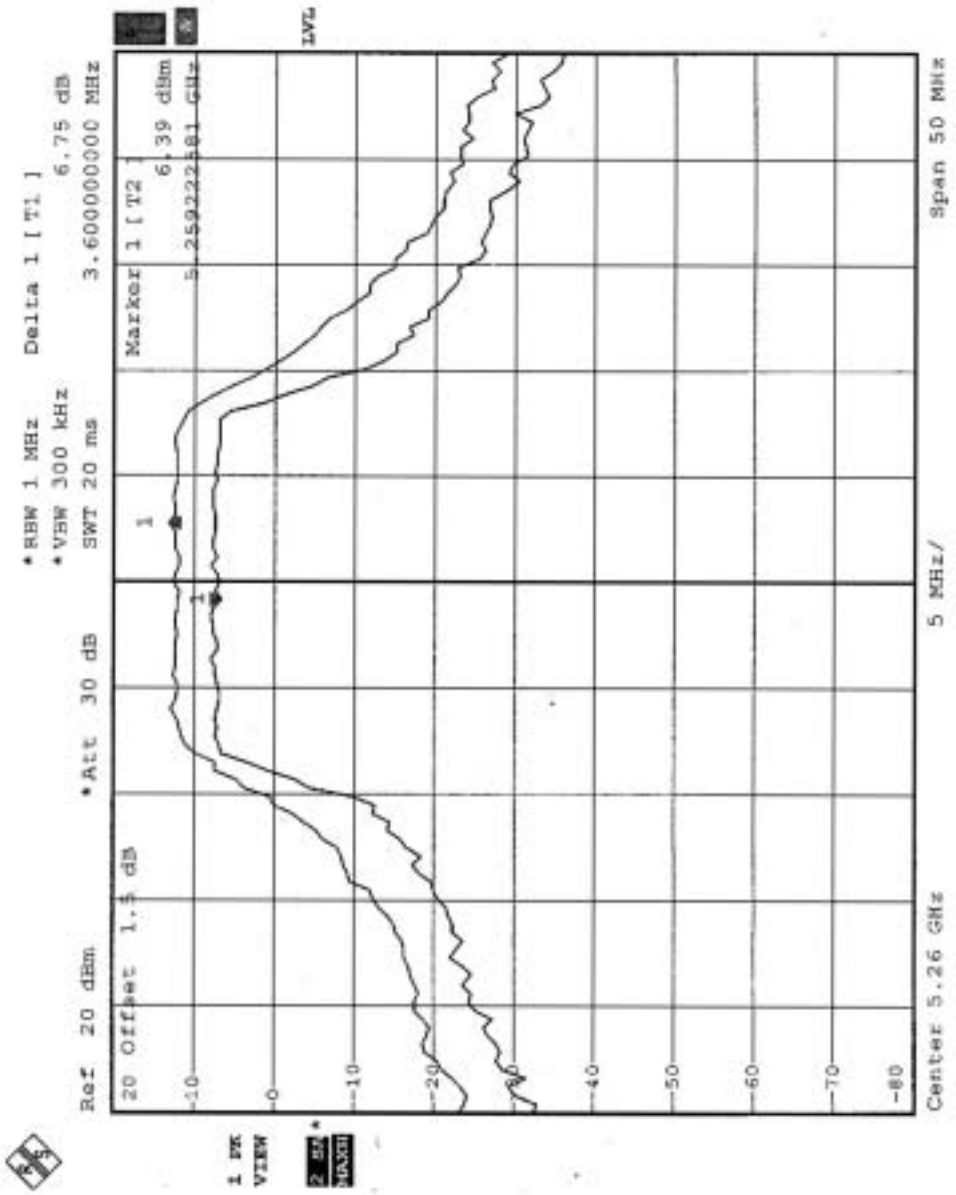
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.4.7 TEST RESULTS (ANTENNA 2)

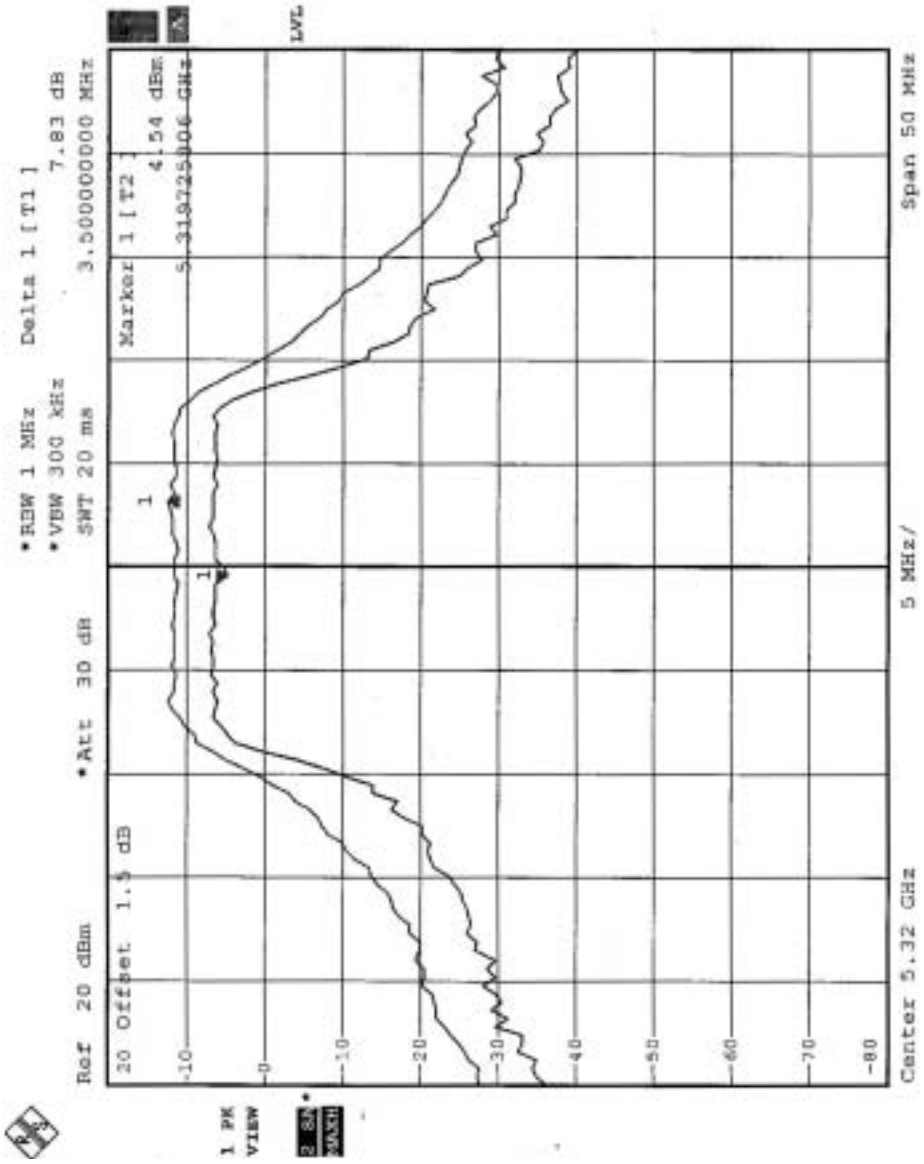
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	21eg. C, 58RH, 970 hPa	**TESTED BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
5	5260	6.75	13	PASS
8	5320	7.83	13	PASS

CHANNEL 5


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Att 30 dB
Ref 20 dBm
Offset 1.5 dB
Delta 1 [T1]
6.75 dB
3.60000000 MHz
Marker 1 [T2]
6.39 dBm
5.25922581 GHz
Center 5.26 GHz
5 MHz/
Span 50 MHz
1 PK
VIEW
2 AV
MAXH

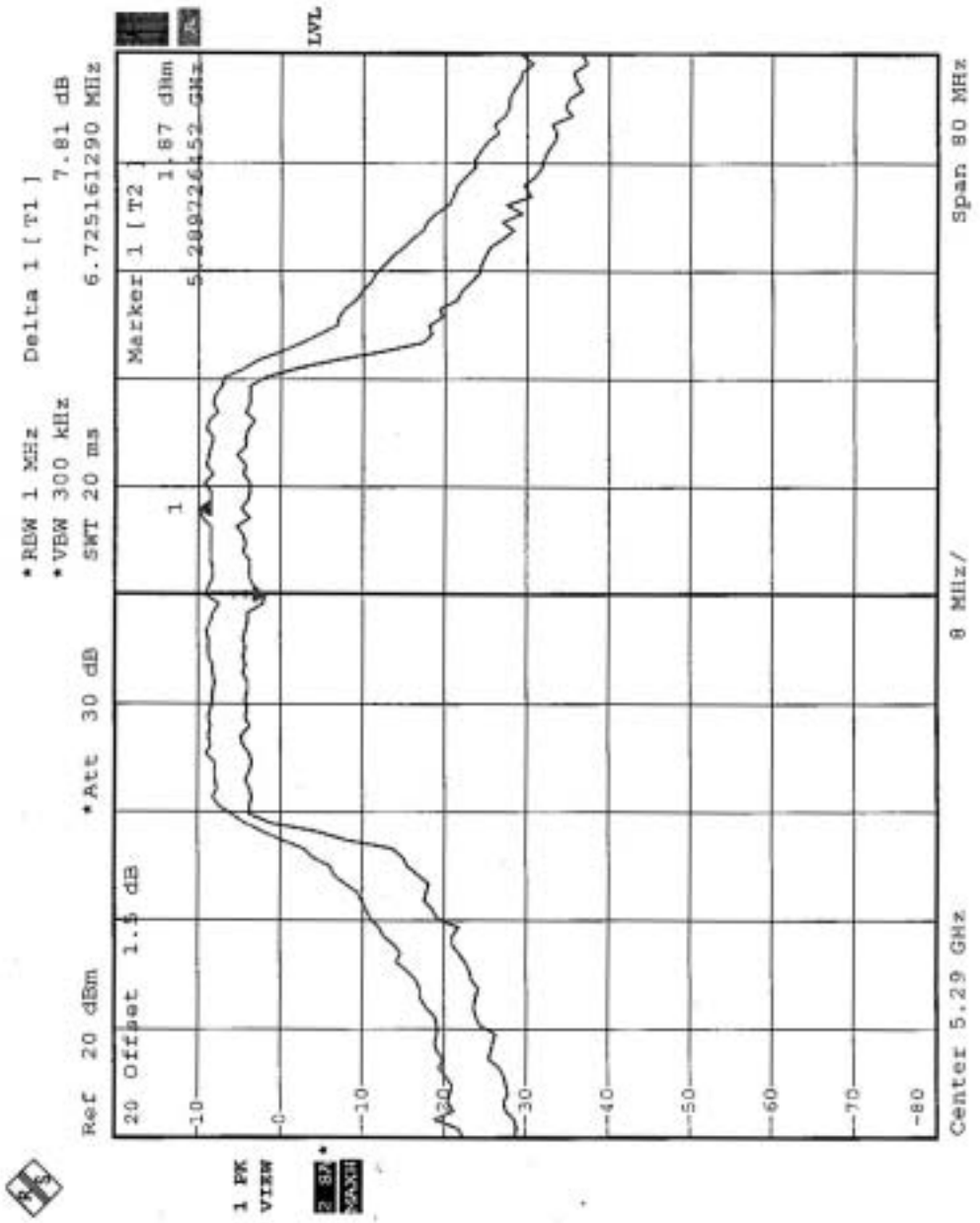
CHANNEL 8


Ref 20 dBm
Offset 1.5 dB
Att 30 dB
RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
7.83 dB
3.500000000 MHz
Marker 1 [T2]
4.54 dBm
5.319725906 GHz
Center 5.32 GHz
5 MHz/
Span 50 MHz
1 PK
VIEW
LVL

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	21eg. C, 58RH, 970 hPa	**TESTED BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
3	5290	7.81	13	PASS

CHANNEL 3


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
7.81 dB
6.725161290 MHz
Marker 1 [T2]
1.87 dBm
5.209226452 GHz
Ref 20 dBm
Offset 1.5 dB
Att 30 dB
Center 5.29 GHz
Span 80 MHz
8 MHz/
LVL
1 PK
VIEW
2 BZ
MAXH

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP30	100019	Dec. 19, 2004

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

The transmitter output was connected to the spectrum analyzer.
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

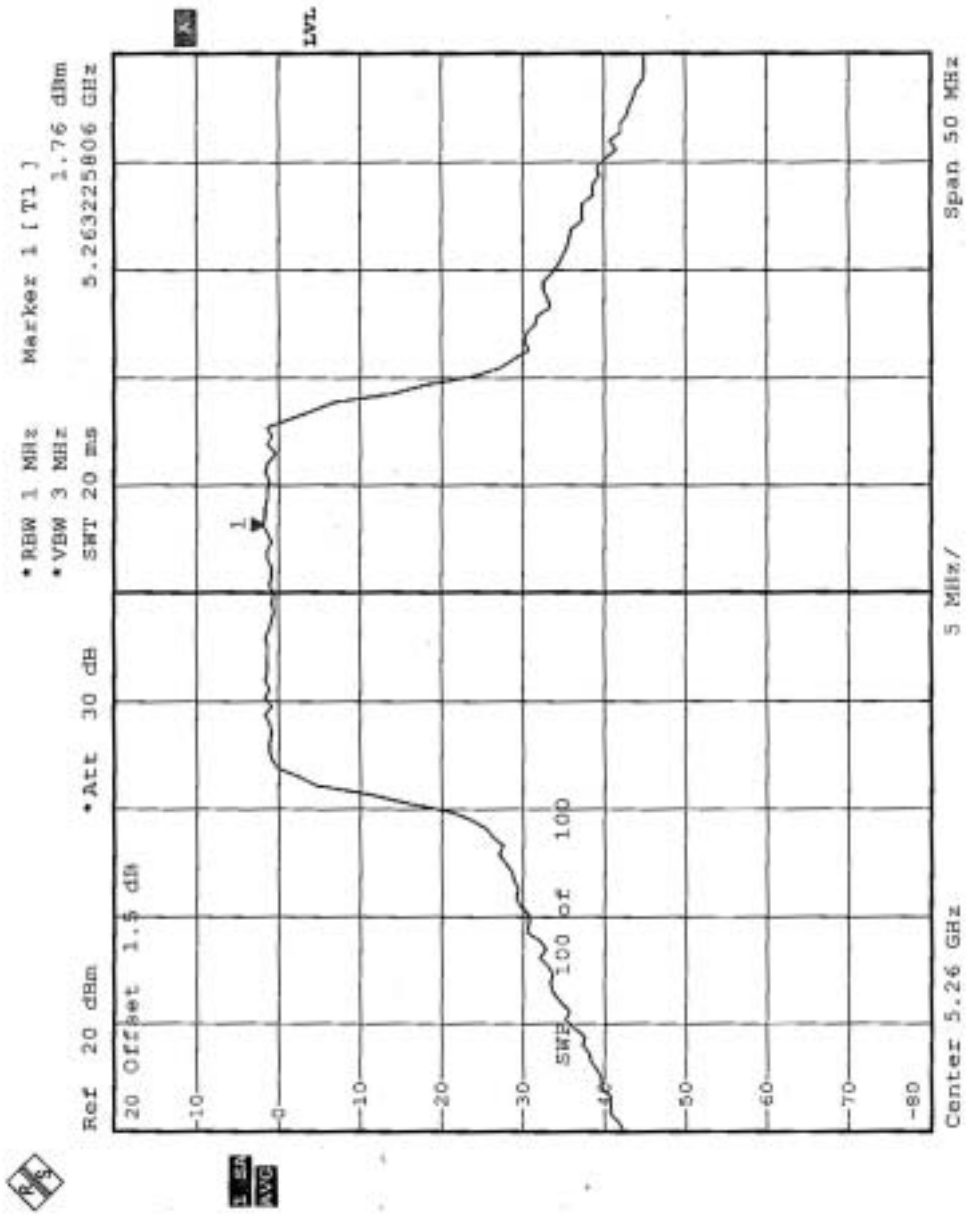
Same as 5.3.6

4.5.7 TEST RESULTS (ANTENNA 2)

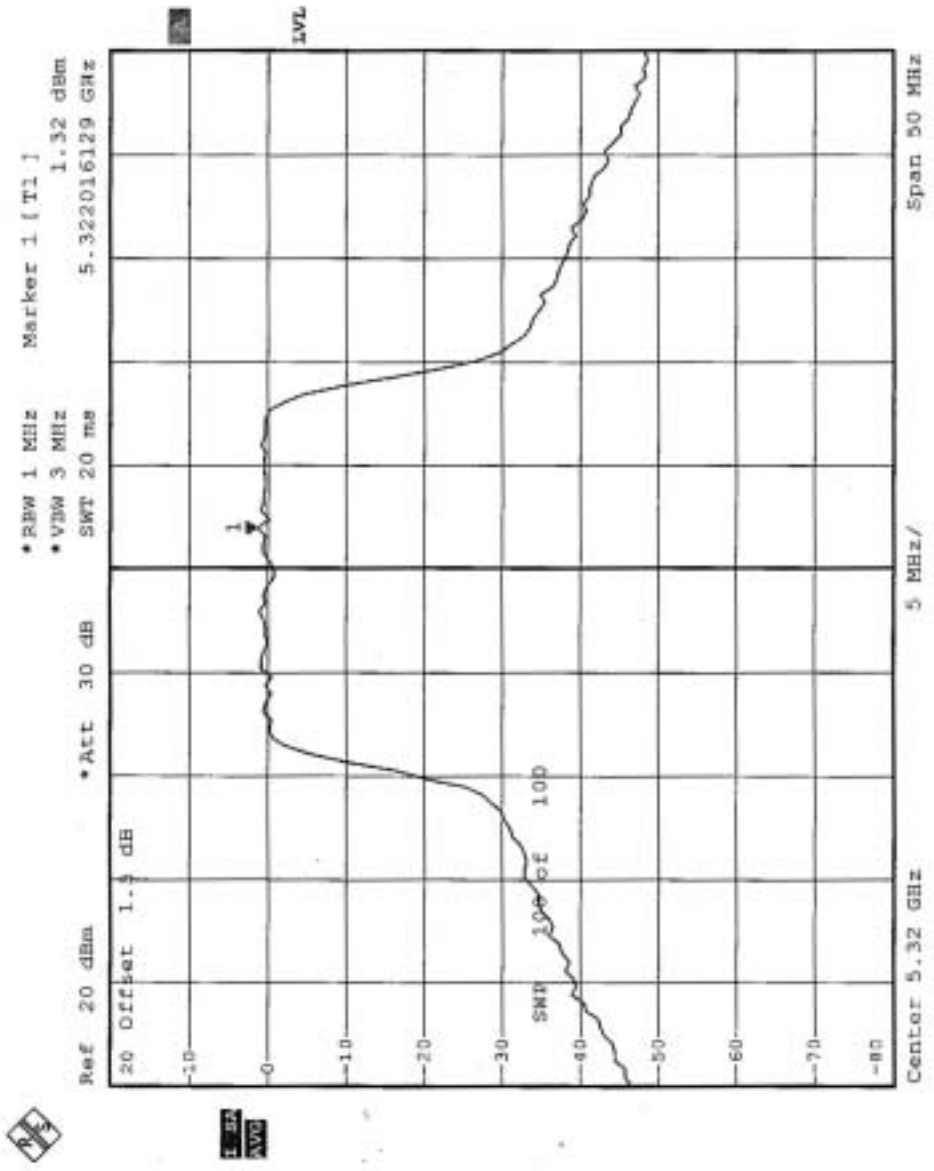
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	21eg. C, 58RH, 970 hPa	**TESTED BY**	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
5	5260	1.76	11	PASS
8	5320	1.32	11	PASS

CHANNEL 5


Ref 20 dBm
20 Offset 1.5 dB
• Att 30 dB
• RBW 1 MHz
• VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
1.76 dBm
5.263225806 GHz
Center 5.26 GHz
5 MHz/
Span 50 MHz
SWP 100 of 100
LVL
1
-10
0
10
20
30
40
50
60
70
80

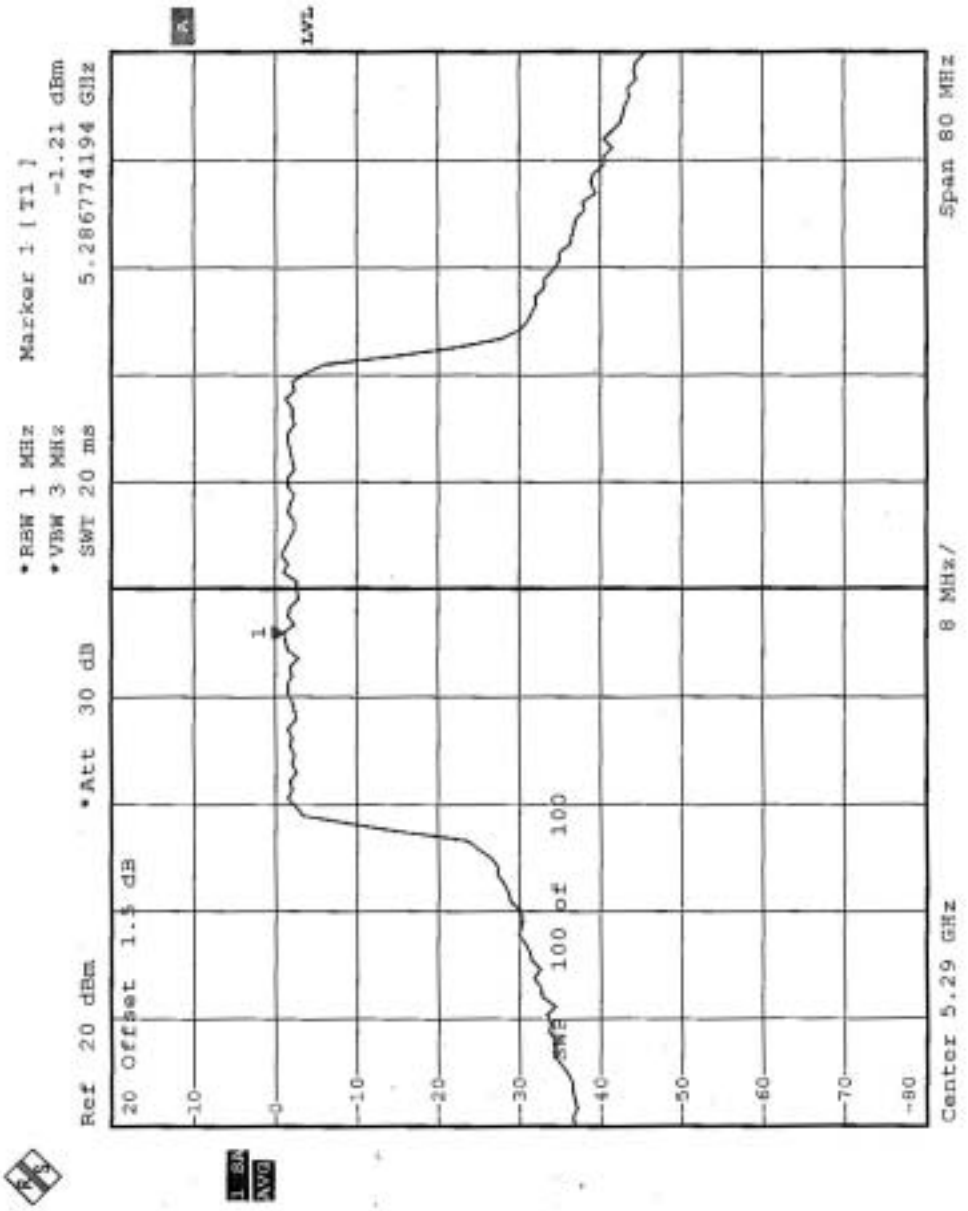
CHANNEL 8


Ref 20 dBm
20 Offset 1.5 dB
•Att 30 dB
•VBW 3 MHz
SWT 20 ms
•RBW 1 MHz
Marker 1 [T1]
1.32 dBm
5.32016129 GHz
Center 5.32 GHz
5 MHz/
Span 50 MHz
SWP 100 of 100
CLR WR
AVG

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	21eg. C, 58RH, 970 hPa	**TESTED BY**	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
3	5290	-1.21	11	PASS

CHANNEL 3


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-1.21 dBm
5.286774194 GHz
Att 30 dB
Ref 20 dBm
Offset 1.5 dB
Center 5.29 GHz
Span 80 MHz
8 MHz/

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 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
R&S SPECTRUM ANALYZER	FSP30	100019	Dec. 19, 2004

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

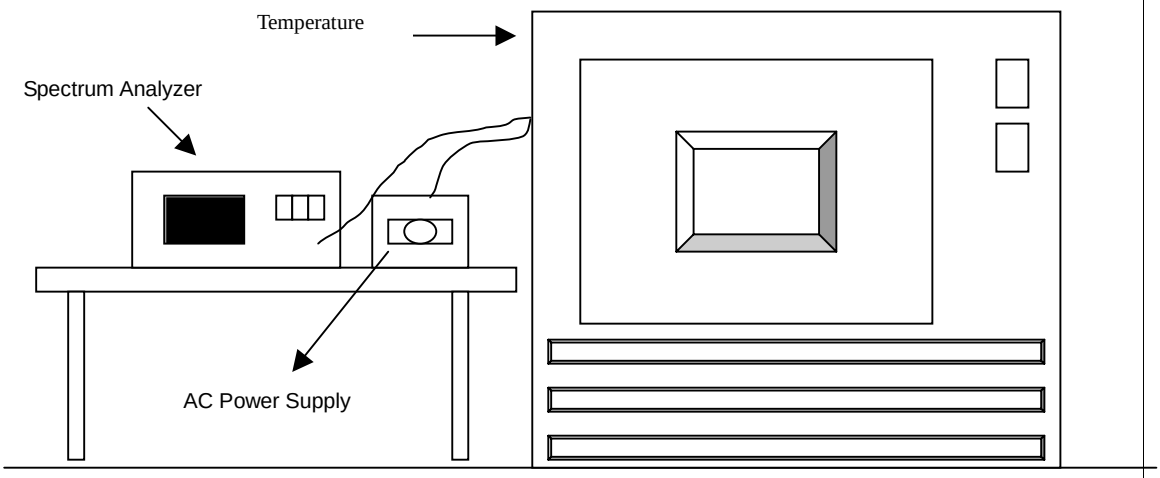
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal AC 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 4.1.6

4.6.7 TEST RESULTS

Operating frequency: 5320MHz				Limit : ± 0.02%			
Temp. (°C)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
126.5	531	5320.0366	-0.000158%	5319.9915	-0.000160%	5319.9911	-0.000167%
	110.0	5319.9918	-0.000154%	5319.9917	-0.000156%	5319.9914	-0.000162%
	93.5	5319.9916	-0.000158%	5319.9915	-0.000160%	5319.9911	-0.000167%
40	126.5	5319.9881	-0.000224%	5319.9976	-0.000045%	5319.9973	-0.000051%
	110.0	5319.9882	-0.000222%	5319.9976	-0.000045%	5319.9975	-0.000047%
	93.5	5319.9981	-0.000036%	5319.9979	-0.000039%	5319.9972	-0.000053%
30	126.5	5319.9922	-0.000147%	5319.9919	-0.000152%	5319.9917	-0.000156%
	110.0	5319.9922	-0.000147%	5319.9921	-0.000148%	5319.9918	-0.000154%
	93.5	5319.9922	-0.000147%	5319.9919	-0.000152%	5319.9916	-0.000158%
20	126.5	5320.0071	0.000133%	5320.0068	0.000128%	5320.0065	0.000122%
	110.0	5320.0072	0.000135%	5320.0072	0.000135%	5320.0069	0.000130%
	93.5	5320.0071	0.000133%	5320.0068	0.000128%	5320.0065	0.000122%
10	126.5	5320.0124	0.000233%	5320.0122	0.000229%	5320.0119	0.000224%
	110.0	5320.0124	0.000233%	5320.0122	0.000229%	5320.0121	0.000227%
	93.5	5320.0124	0.000233%	5320.0121	0.000227%	5320.0118	0.000222%
0	126.5	5320.023	0.000432%	5320.0180	0.000338%	5320.0180	0.000338%
	110.0	5320.023	0.000432%	5320.0210	0.000395%	5320.0190	0.000357%
	93.5	5320.021	0.000395%	5320.0180	0.000338%	5320.0180	0.000338%
-10	126.5	5320.0306	0.000575%	5320.0290	0.000545%	5320.0270	0.000508%
	110.0	5320.0304	0.000571%	5320.0310	0.000583%	5320.0290	0.000545%
	93.5	5320.0304	0.000571%	5320.0280	0.000526%	5320.0270	0.000508%
-20	126.5	5320.0300	0.000564%	5320.0250	0.000470%	5320.0210	0.000395%
	110.0	5320.0300	0.000564%	5320.0280	0.000526%	5320.0240	0.000451%
	93.5	5320.0300	0.000564%	5320.0240	0.000451%	5320.0220	0.000414%
-30	126.5	5320.0116	0.000218%	5320.0111	0.000209%	5320.0108	0.000203%
	110.0	5320.0116	0.000218%	5320.0113	0.000212%	5320.0111	0.000209%
	93.5	5320.0116	0.000218%	5320.0111	0.000209%	5320.0108	0.000203%

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2004

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. 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 RBW of spectrum analyzer to 1MHz and VBW of spectrum analyzer to 300Hz 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.

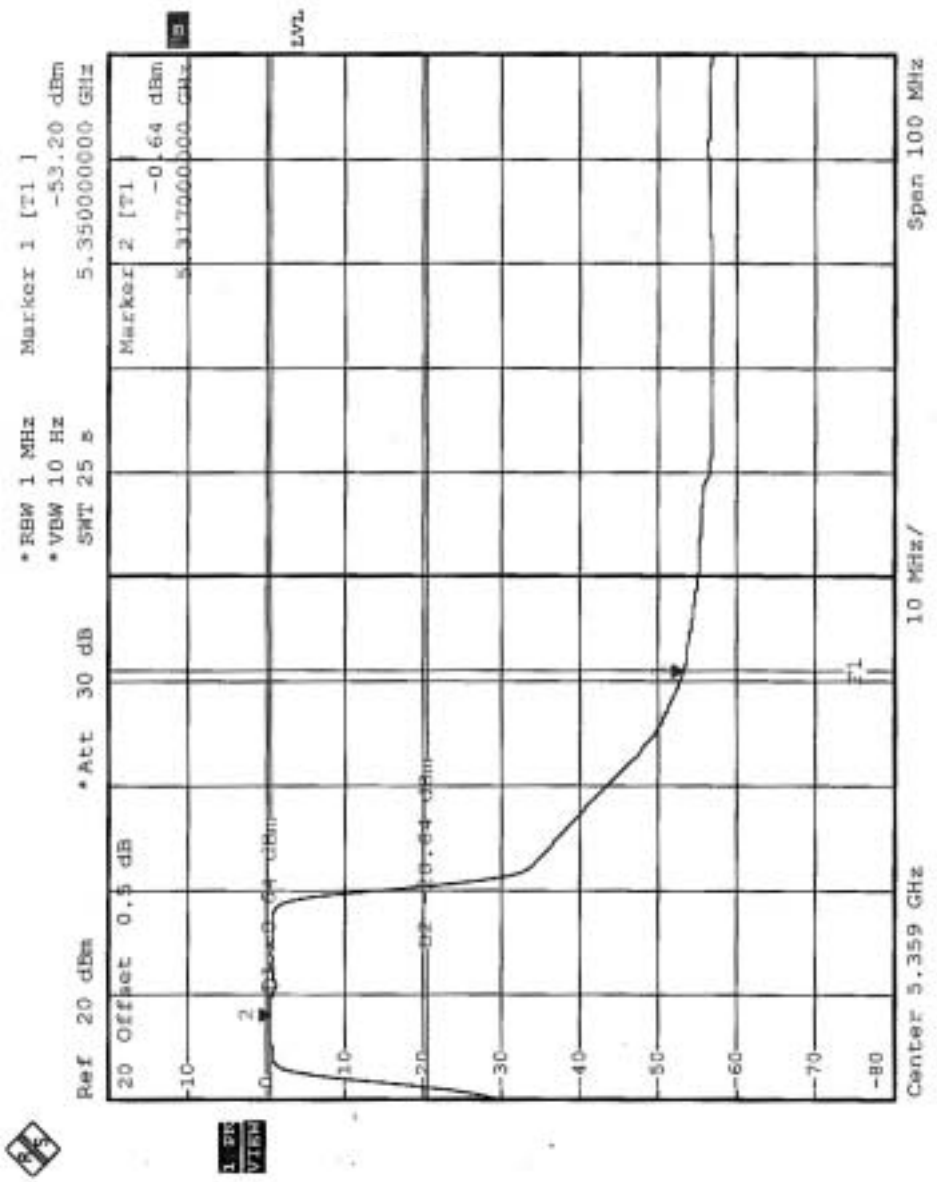
4.7.4 TEST RESULTS (Antenna 2)

For signals in the restricted bands above and below the 5.15 to 5.35 GHz 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 (Average RBW=1MHz, VBW=300Hz) are attached on the following 2 pages.

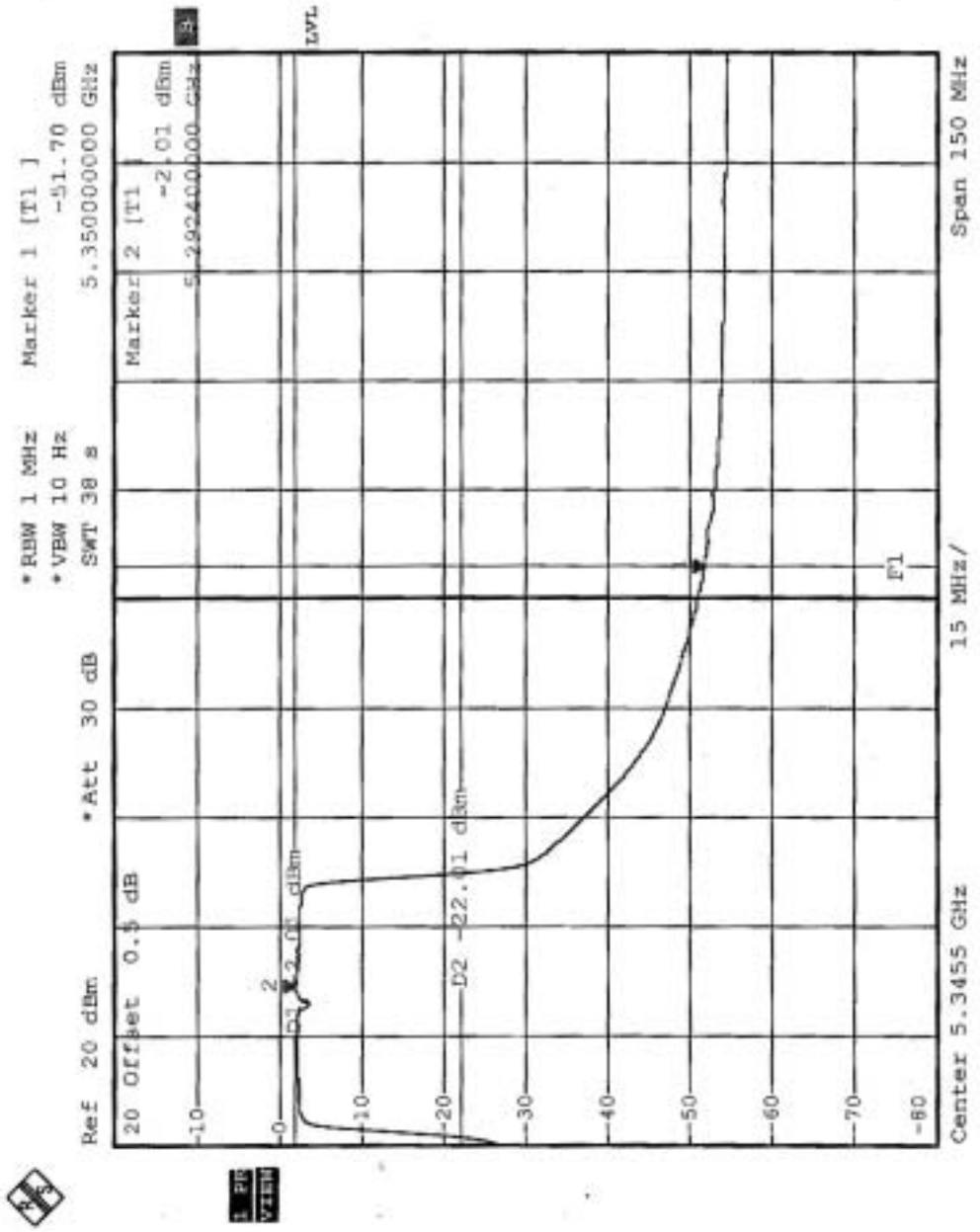
Normal Mode: Channel 8 (5320 MHz)

The band edge emission plot on the following page shows 52.56dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 (normal mode) is 103.0dBuV/m, so the maximum field strength in restrict band is 103.0-52.56=50.44dBuV/m which is under 54dBuV/m limit.



Turbo Mode: Channel 3 (5290 MHz)

The band edge emission plot on the following page shows 49.69dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 (turbo mode) is 101.2dBuV/m, so the maximum field strength in restrict band is 101.2-49.69=51.51dBuV/m which is under 54dBuV/m limit.



FOR FREQUENCY 5.725~5.850GHz

4.8 6DB BANDWIDTH MEASUREMENT

4.8.1 LIMITS OF 6DB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.8.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2004

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.8.3 TEST PROCEDURE

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

4.8.4 DEVIATION FROM TEST STANDARD

No deviation

4.8.5 TEST SETUP

4.8.6 EUT OPERATING CONDITIONS

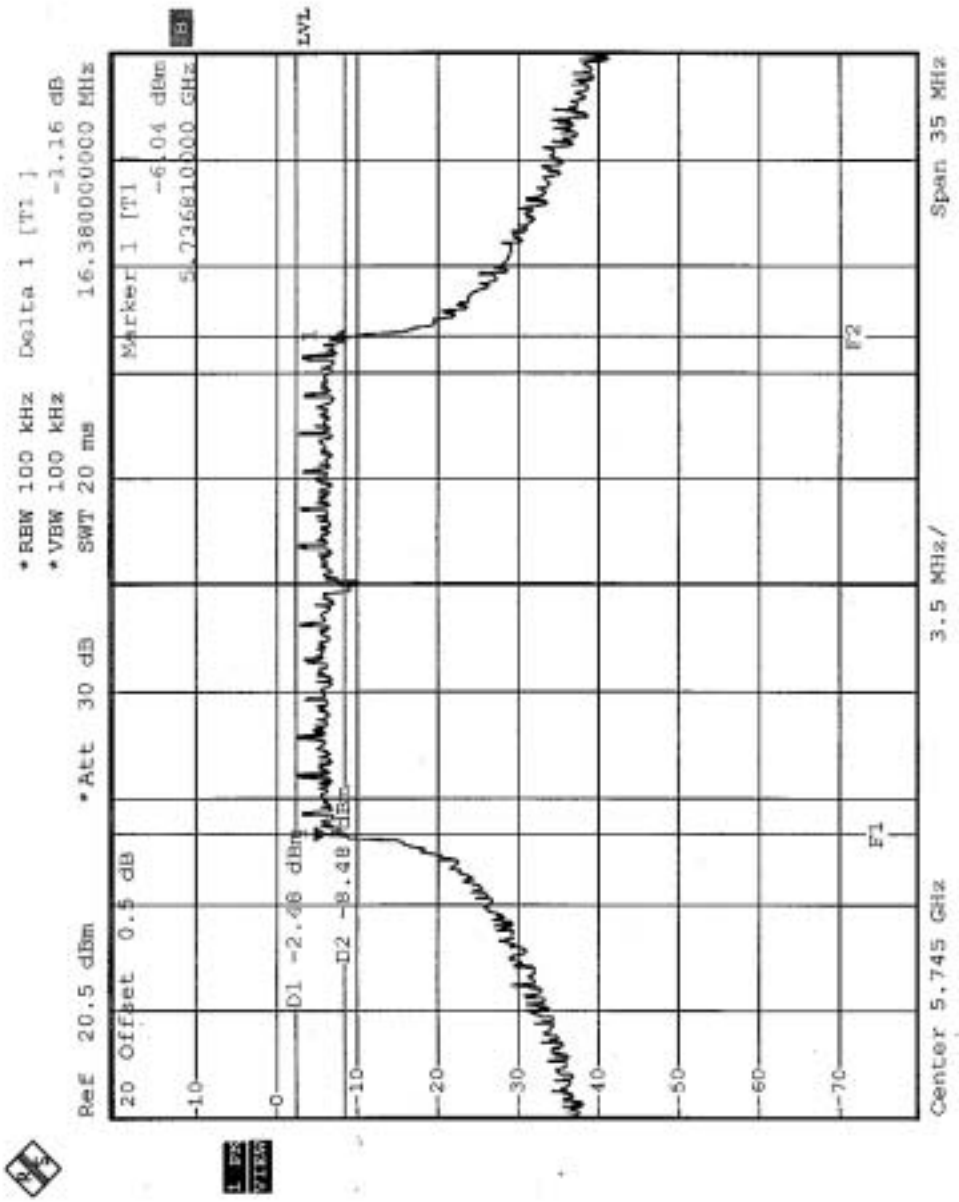
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.8.7 TEST RESULTS (ANTENNA 1)

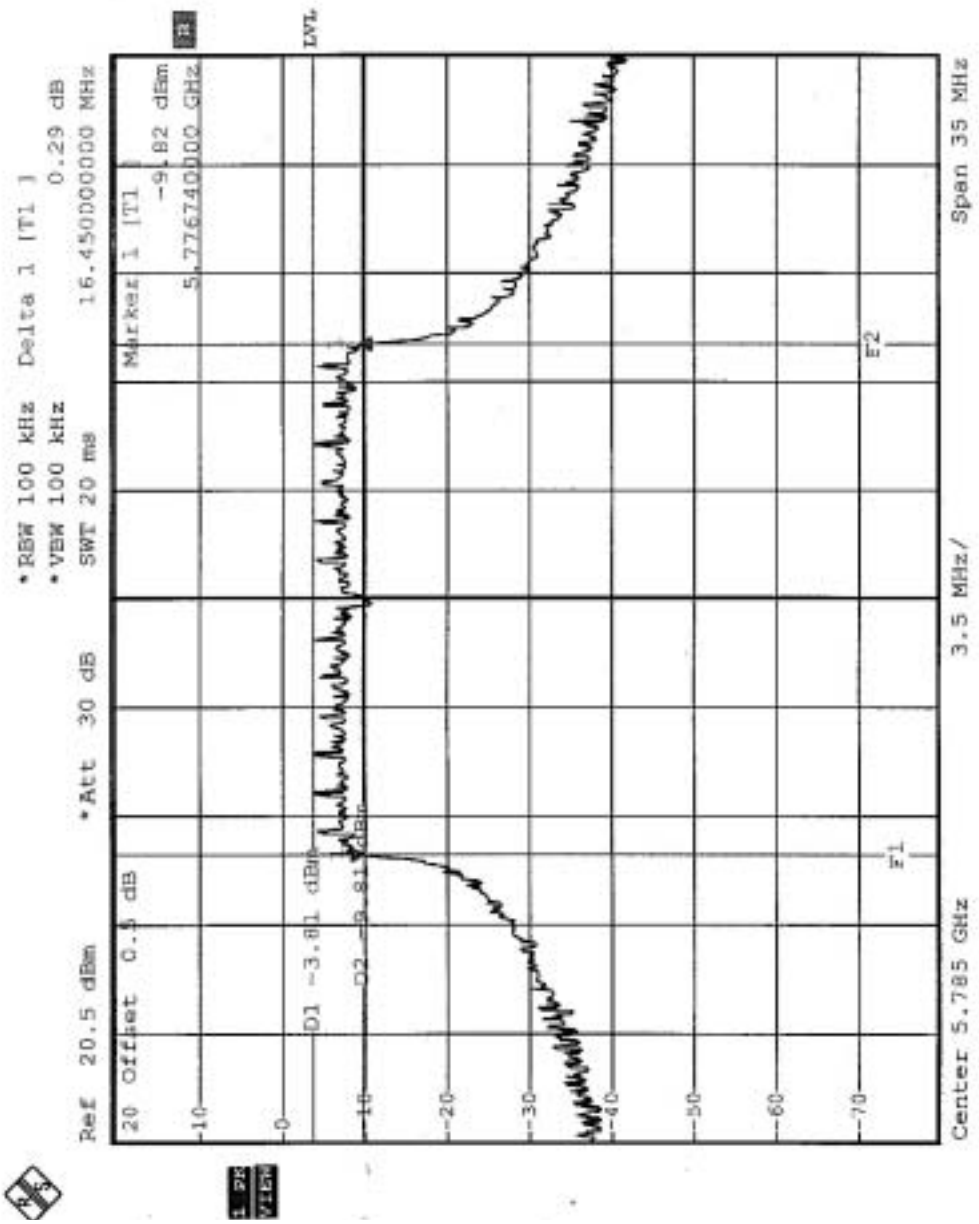
EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg.C, 58%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
9	5745	16.38	0.5	PASS
11	5785	16.45	0.5	PASS
13	5825	16.38	0.5	PASS

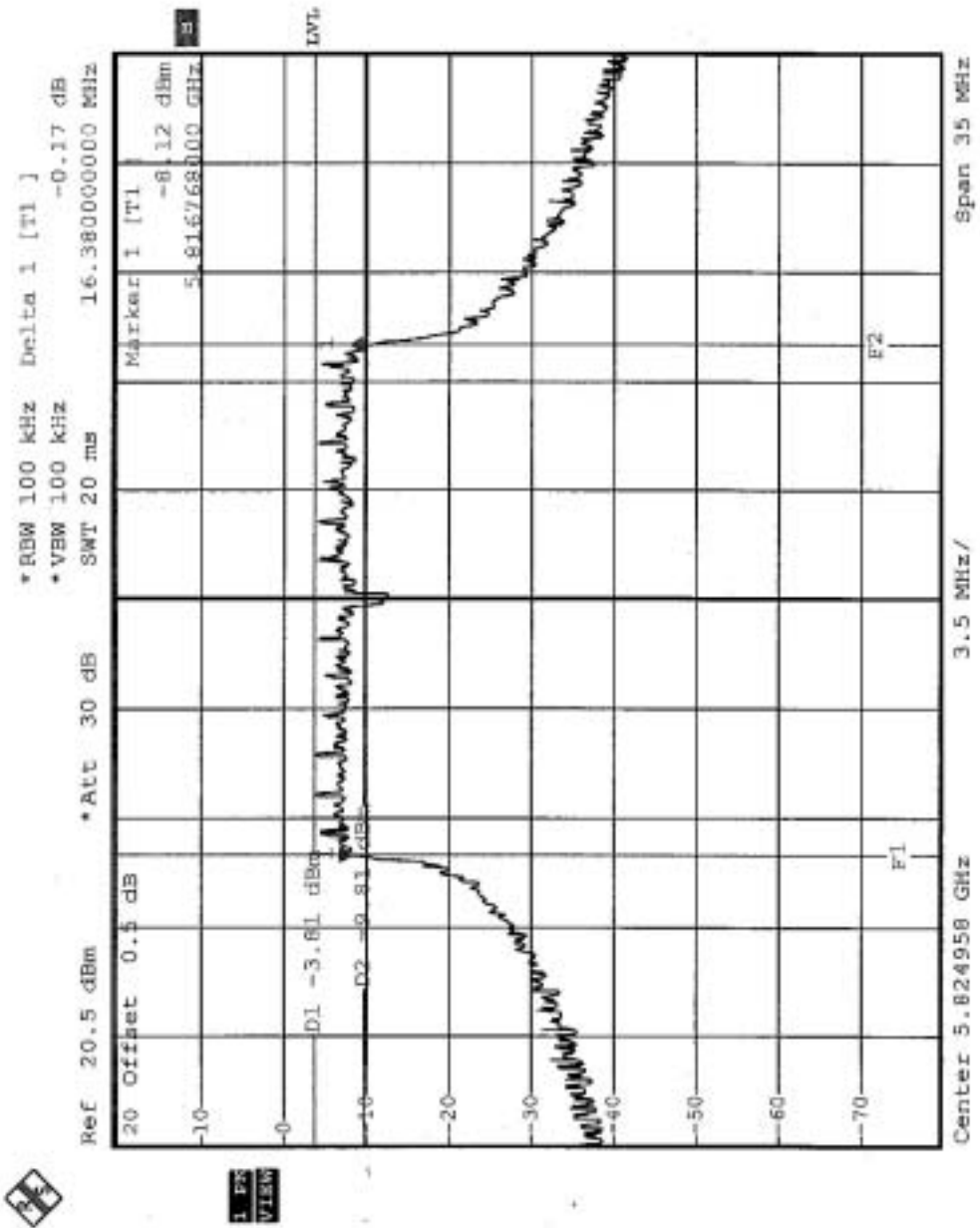
CH9


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Delta 1 [T1]
-3.16 dB
16.380000000 MHz
Marker 1 [T1
-6.04 dBm
5.723681000 GHz
D1 -2.00 dBm
D2 -8.48 dB
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
F1
F2
LVL

CH11


*RBW 100 kHz
*VBW 100 kHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
SWT 20 ms
Delta 1 [T1]
0.29 dB
16.45000000 MHz
Marker 1 [T1]
-9.82 dBm
5.77674000 GHz
D1 -3.81 dBm
D2 -9.81 dBm
F1
F2
Center 5.785 GHz
3.5 MHz/
Span 35 MHz

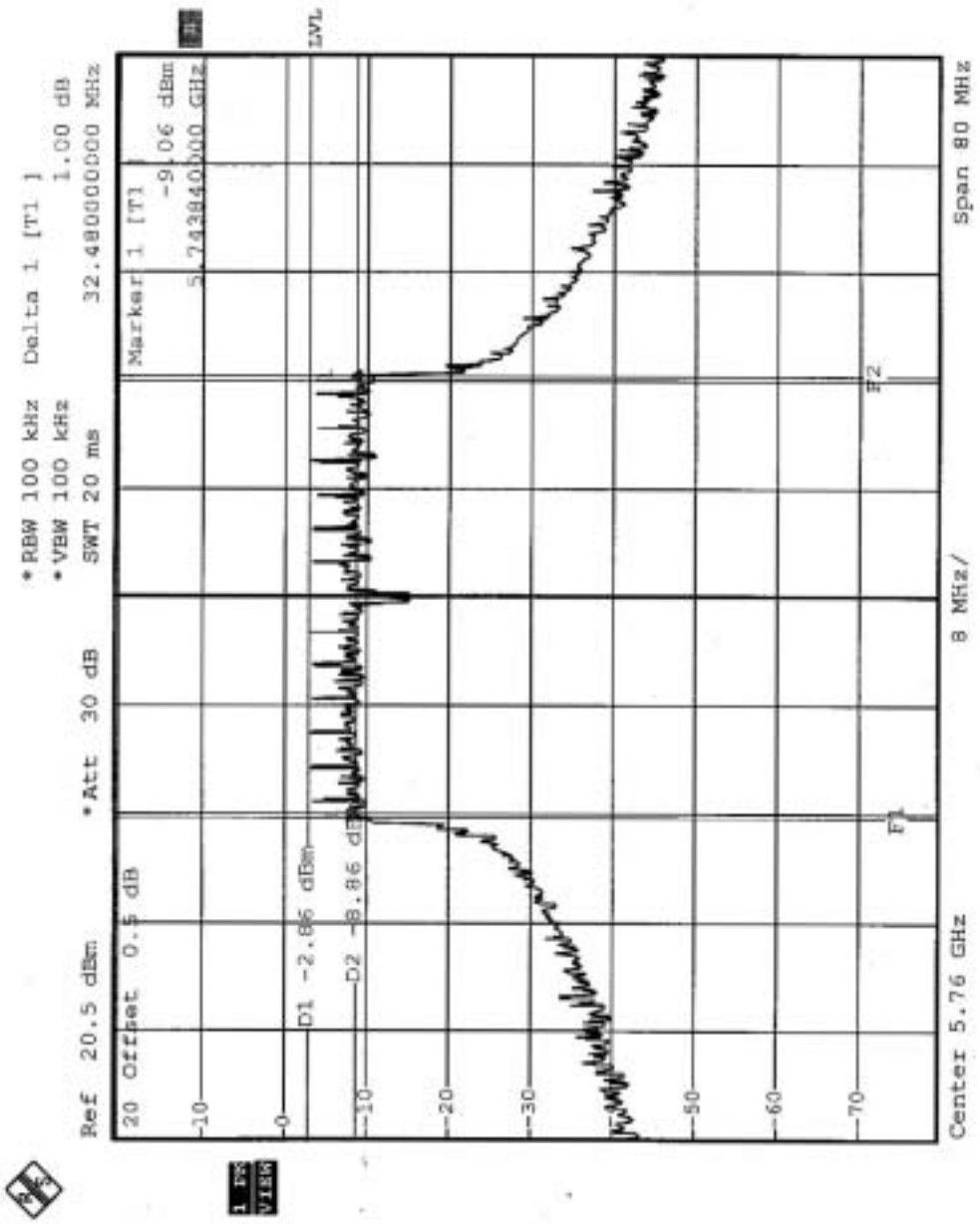
CH13


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Delta 1 [T1]
-0.17 dB
16.38000000 MHz
Marker 1 [T1]
-8.12 dBm
5.81676800 GHz
D1 -3.61 dBm
D2 -9.81 dB
F1
F2
Center 5.824958 GHz
3.5 MHz/
Span 35 MHz

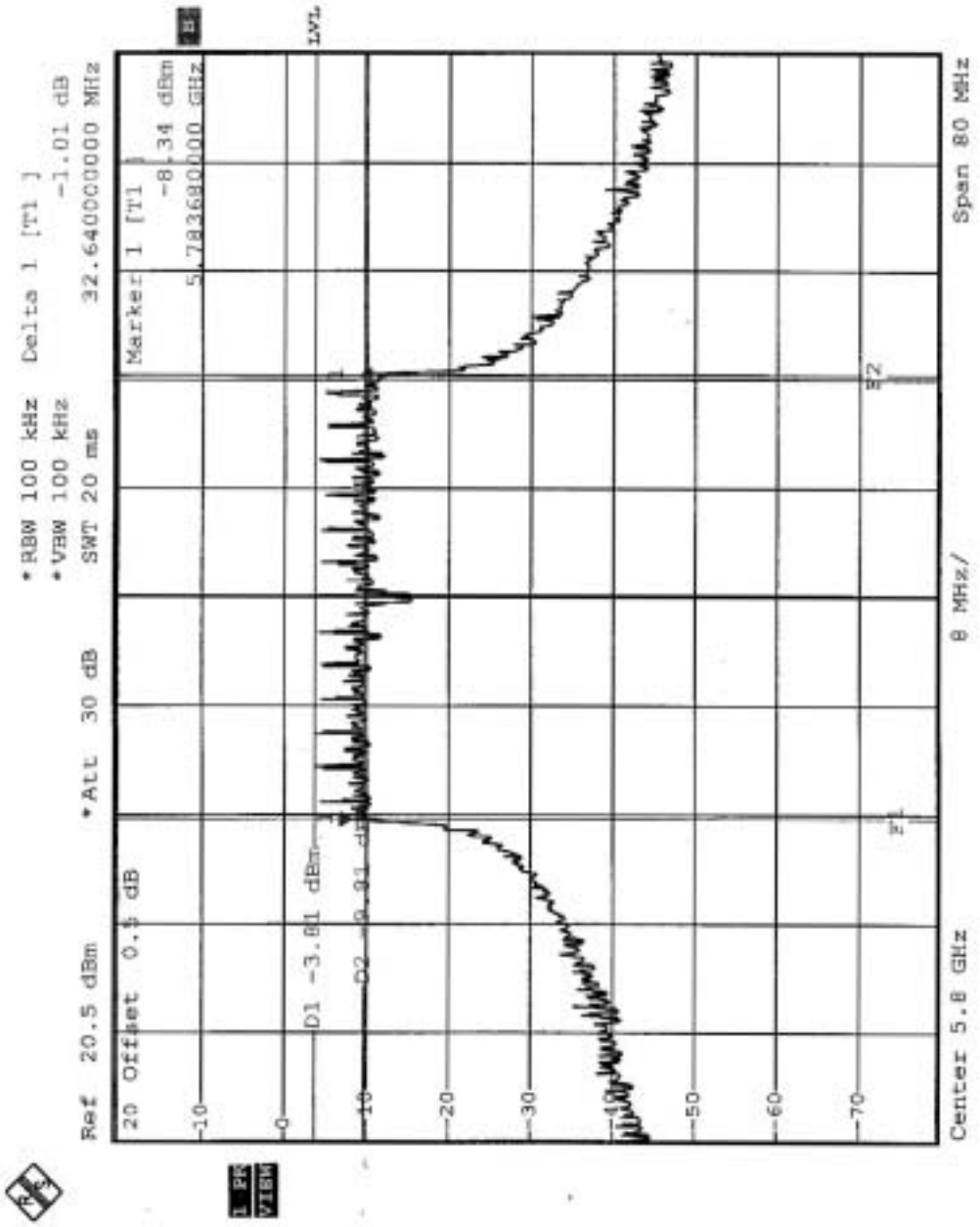
EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg.C, 58%RH, 970 hPa
TEST MODE	Turbo	**TEST BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
4	5760	32.48	0.5	PASS
5	5800	32.64	0.5	PASS

CH4


Ref 20.5 dBm
20 Offset 0.5 dB
* Att 30 dB
SWT 20 ms
* VBW 100 kHz
* RBW 100 kHz
Delta 1 [T1]
1.00 dB
32.480000000 MHz
Marker 1 [T1
-9.06 dBm
5.743840000 GHz
D1 -2.86 dBm
D2 -8.86 dB
Center 5.76 GHz
8 MHz/
Span 80 MHz

CH5

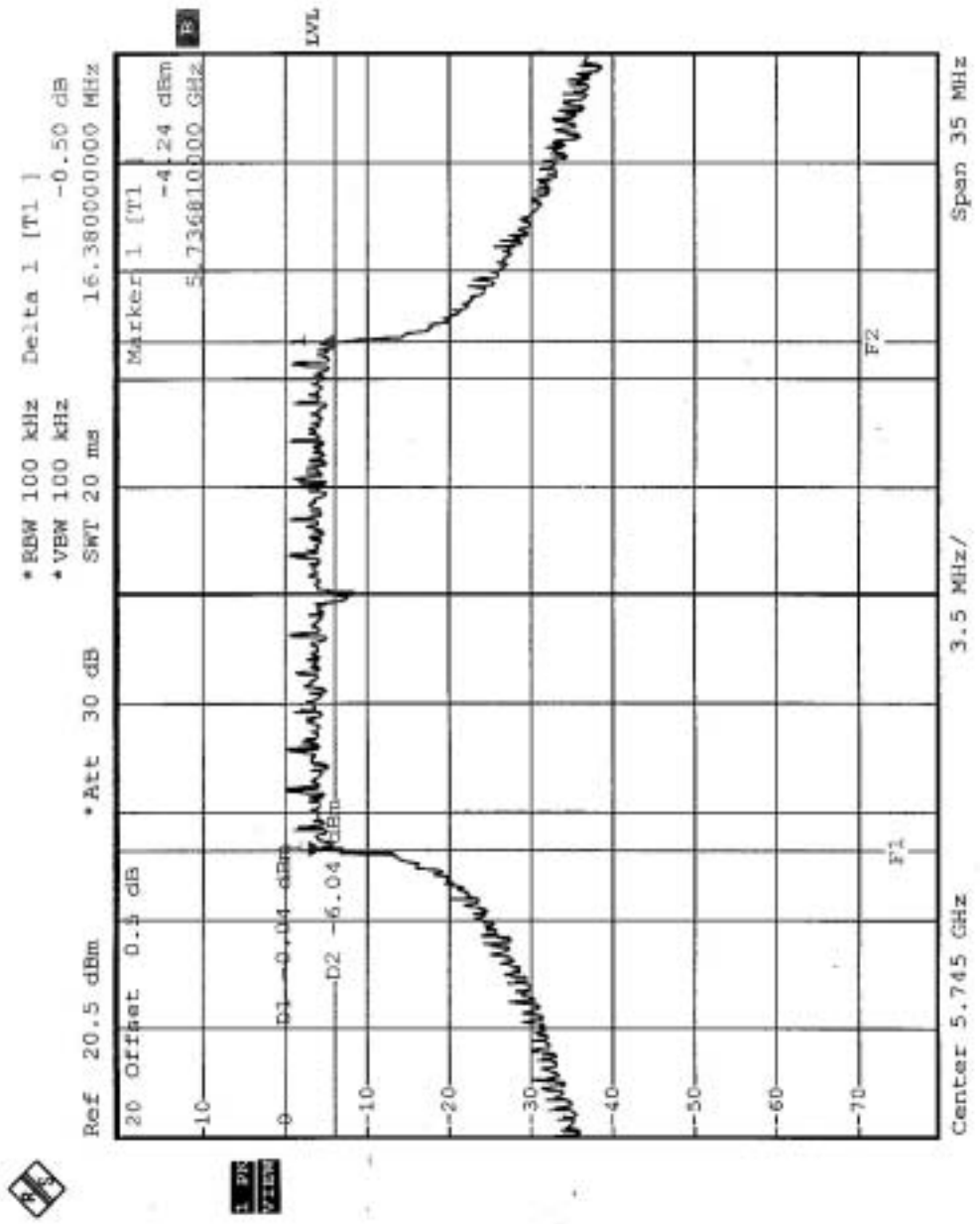

RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
-1.01 dB
32.640000000 MHz
Marker 1 [T1]
-8.34 dBm
5.783680000 GHz
Ref 20.5 dBm
Offset 0.5 dB
ATT 30 dB
D1 -3.81 dBm
D2 -9.81 dB
Center 5.8 GHz
8 MHz/
Span 80 MHz

4.8.8 TEST RESULTS (ANTENNA 3)

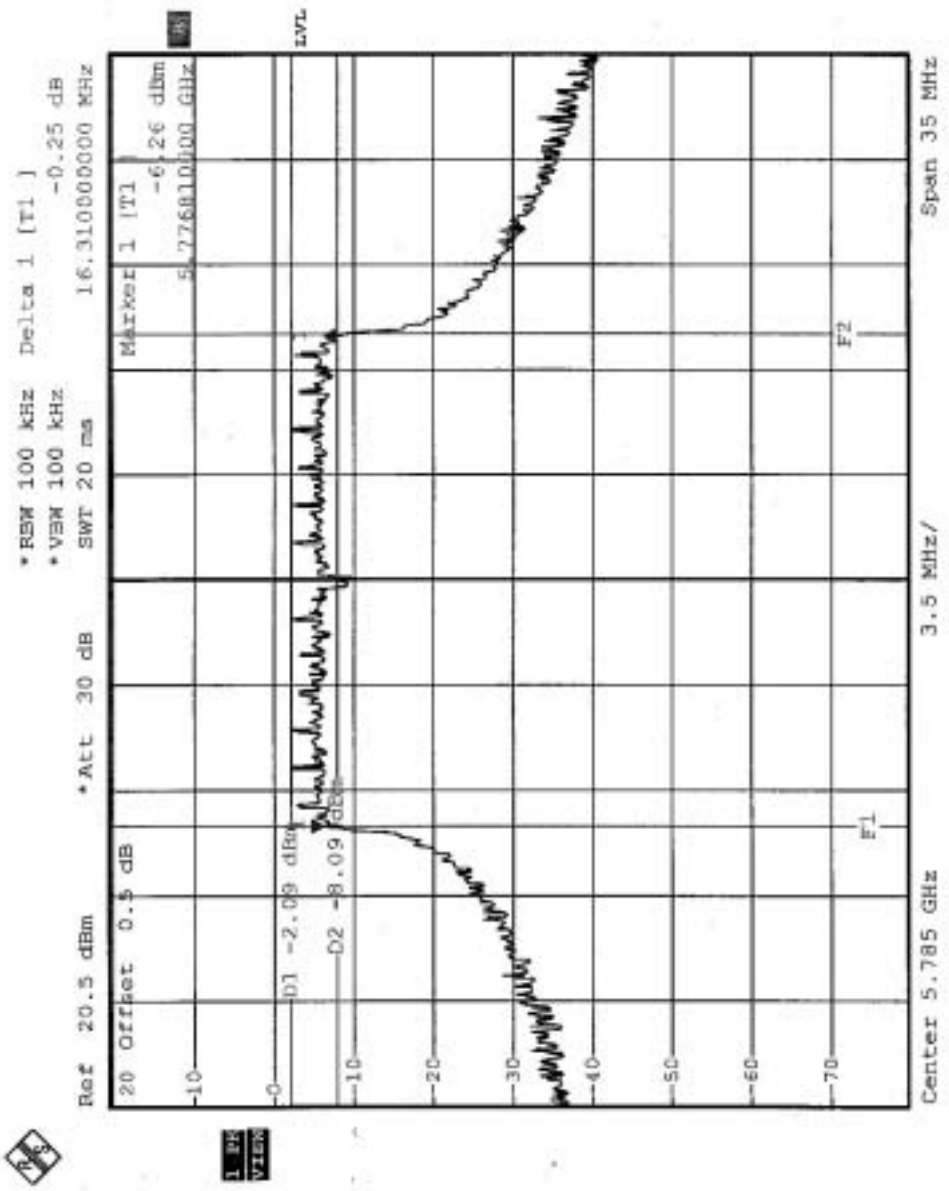
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg.C, 58%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
9	5745	16.38	0.5	PASS
11	5785	16.31	0.5	PASS
13	5825	16.52	0.5	PASS

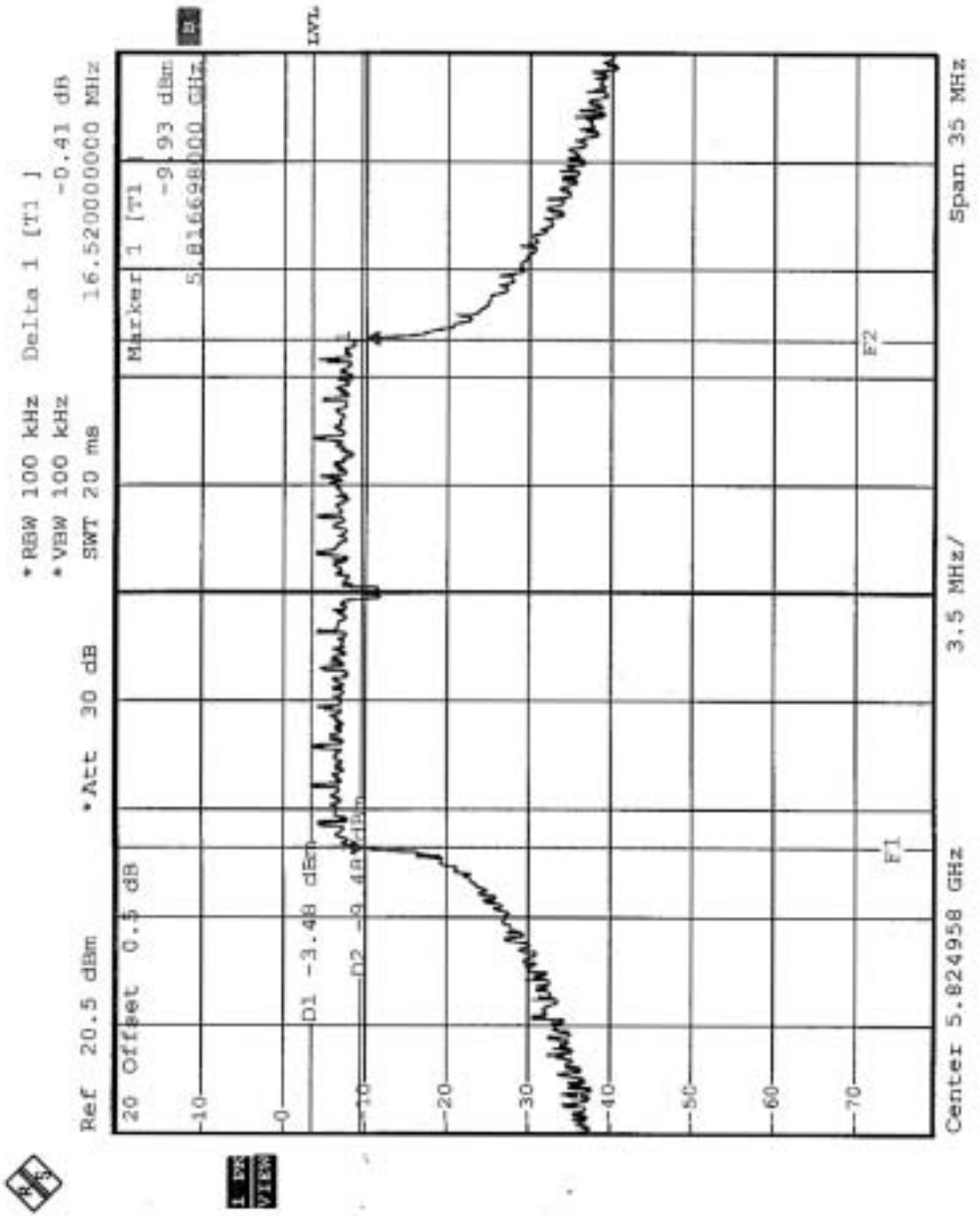
CH9


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
-0.50 dB
16.380000000 MHz
Marker 1 [T1]
-4.24 dBm
5.736810000 GHz
D1 -0.04 dBm
D2 -6.04 dBm
F1
F2
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
LVL

CH11


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Delta 1 [T1]
-0.25 dB
16.310000000 MHz
Marker 1 [T1
-6.26 dBm
5.776810000 GHz
D1 -2.09 dBm
D2 -8.09 dBm
F1
F2
Center 5.785 GHz
3.5 MHz/
Span 35 MHz

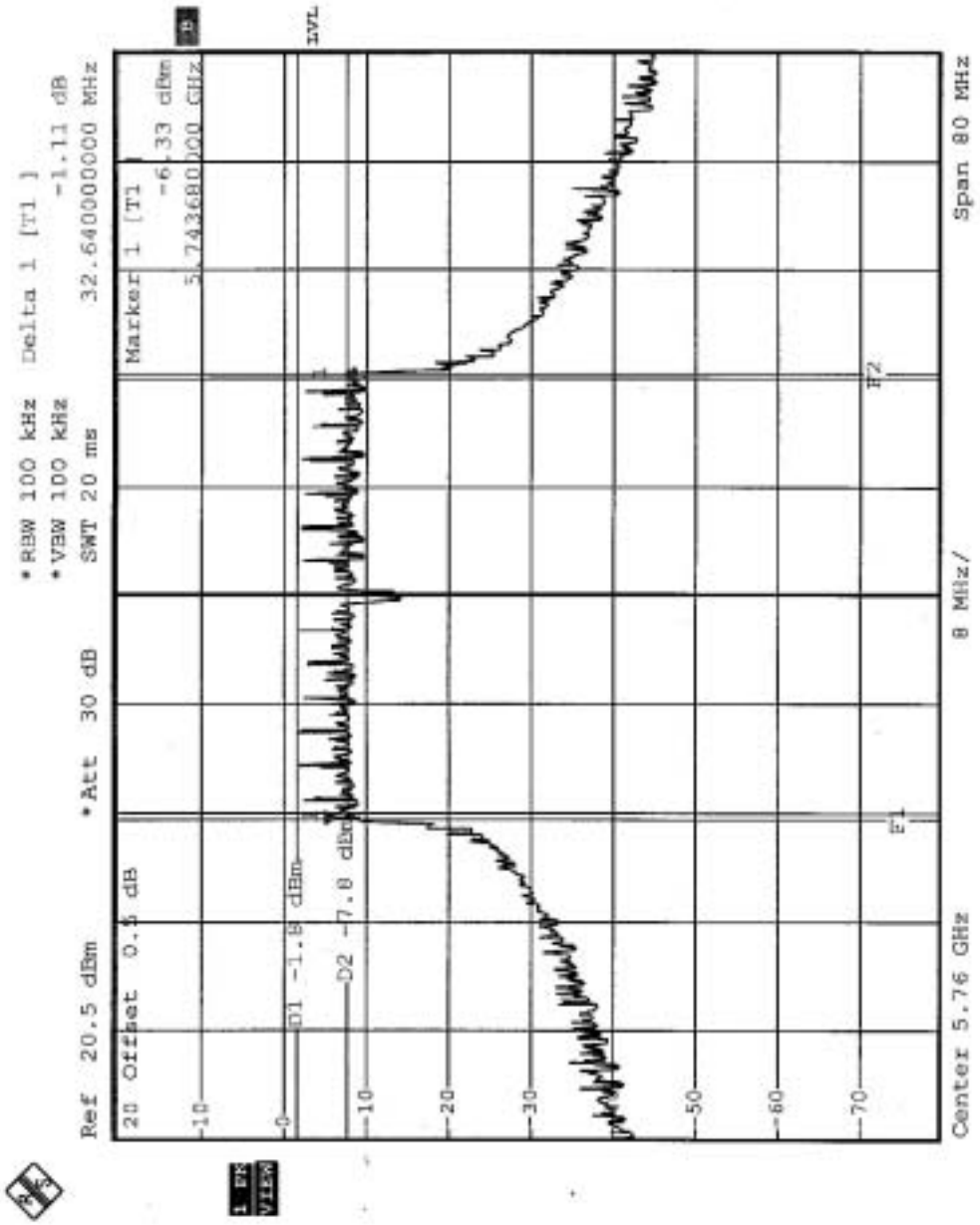
CH13


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
-0.41 dB
16.520000000 MHz
Marker 1 [T1
-9.93 dBm
5.816698000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
D1 -3.48 dBm
D2 -9.48 dBm
F1
F2
Center 5.824958 GHz
3.5 MHz/
Span 35 MHz

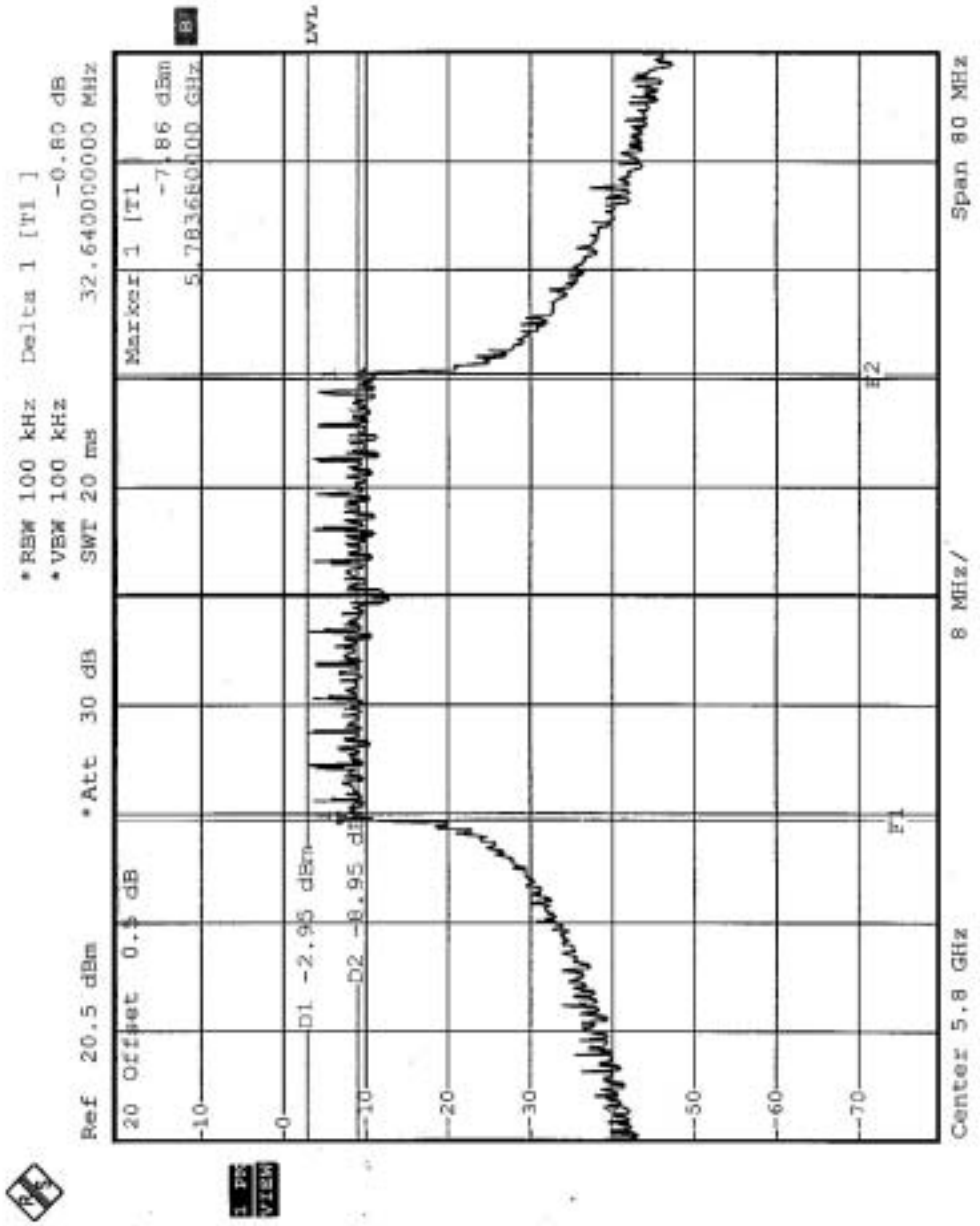
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg.C, 58%RH, 970 hPa
TEST MODE	Turbo	**TEST BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
4	5760	32.64	0.5	PASS
5	5800	32.64	0.5	PASS

CH4


Ref 20.5 dBm
Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
-1.11 dB
32.64000000 MHz
Marker 1 [T1
-6.33 dBm
5.74368000 GHz
D1 -1.8 dBm
D2 -7.0 dB
Center 5.76 GHz
8 MHz/
Span 80 MHz
VVL

CH5


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
-0.60 dB
32.64000000 MHz
Marker 1 [T1
-7.86 dBm
5.78360000 GHz
D1 -2.95 dBm
D2 -8.95 dB
Center 5.8 GHz
8 MHz/
Span 80 MHz

4.9 MAXIMUM PEAK OUTPUT POWER

4.9.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

Note:

1. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

4.9.2 TEST INSTRUMENTS

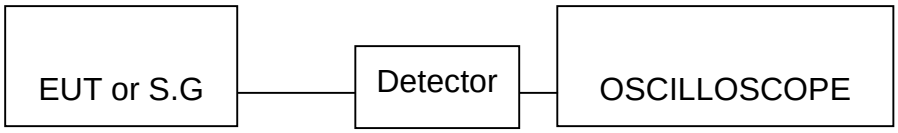
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP30	100019	Dec. 19, 2004

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

4.9.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.
Set the spectrum bandwidth span to view the entire spectrum.
Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=30KHz).
The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.9.4 TEST SETUP



4.9.5 EUT OPERATING CONDITIONS

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

4.9.6 TEST RESULTS (ANTENNA 1)

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	28deg.C, 56%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

Antenna 1 (Gain 17dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
9	5745	14.03	30	PASS
11	5785	12.37	30	PASS
13	5825	12.41	30	PASS

EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	28deg.C, 56%RH, 970 hPa
TEST MODE	Turbo	**TEST BY**	Tony Chen

Antenna 1 (Gain 17dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
4	5760	12.32	30	PASS
5	5800	10.51	30	PASS

4.9.7 TEST RESULTS (ANTENNA 3)

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	28deg.C, 56%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

Antenna 3 (Gain 23dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
9	5745	15.72	30	PASS
11	5785	13.57	30	PASS
13	5825	13.2	30	PASS

EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	28deg.C, 56%RH, 970 hPa
TEST MODE	Turbo	**TEST BY**	Tony Chen

Antenna 3 (Gain 23dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
4	5760	13.01	30	PASS
5	5800	11.62	30	PASS

4.10 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.10.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2004

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.10.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

4.10.3 DEVIATION FROM TEST STANDARD

No deviation

4.10.4 TEST SETUP

4.10.5 EUT OPERATING CONDITION

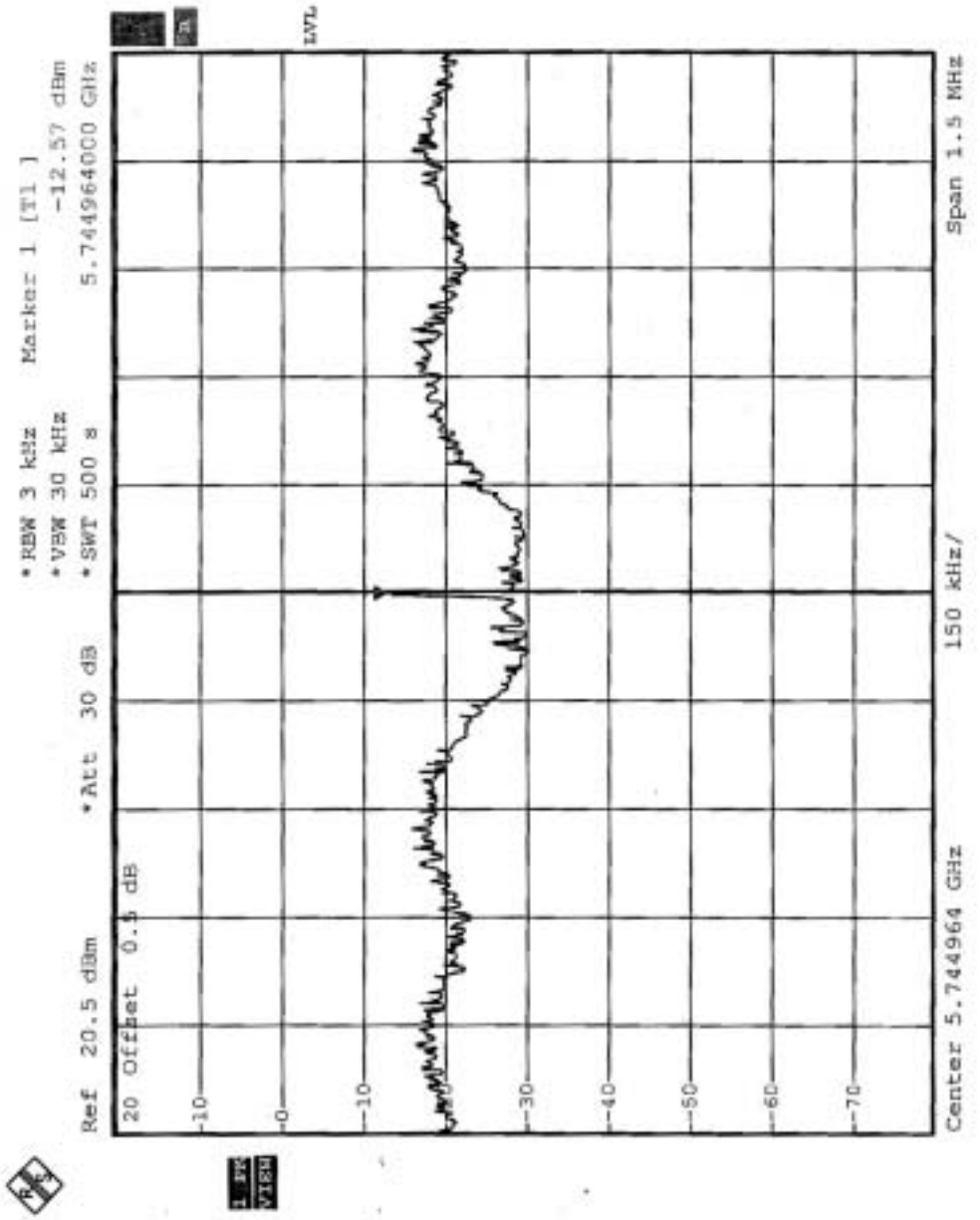
Same as Item 4.3.6

4.10.6 TEST RESULTS (ANTENNA 1)

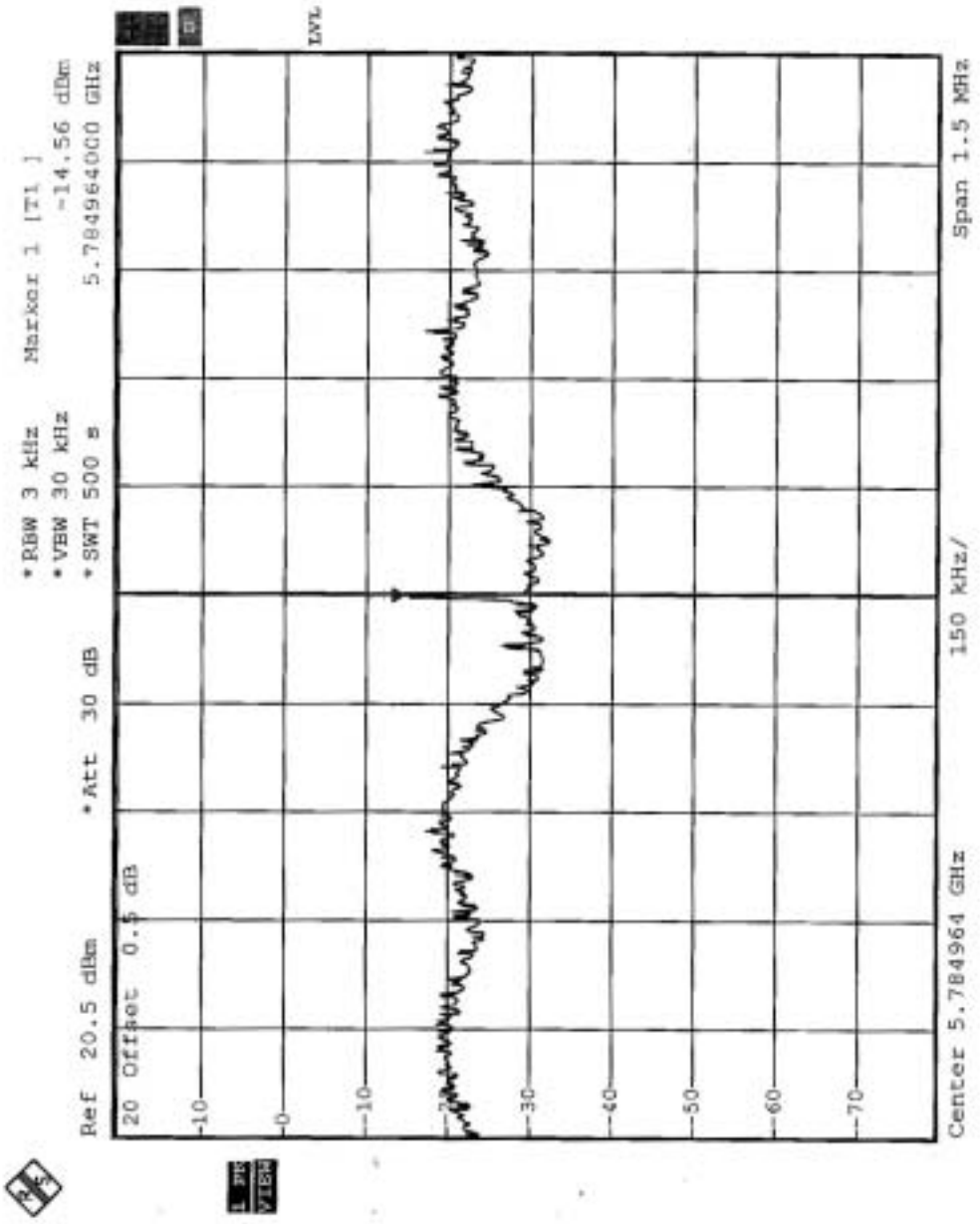
EUT	802.11a Outdoor Bridge With Internal Antenna	**MODEL**	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	51deg. C, 58%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
9	5745	-12.57	8	PASS
11	5785	-14.56	8	PASS
13	5825	-14.48	8	PASS

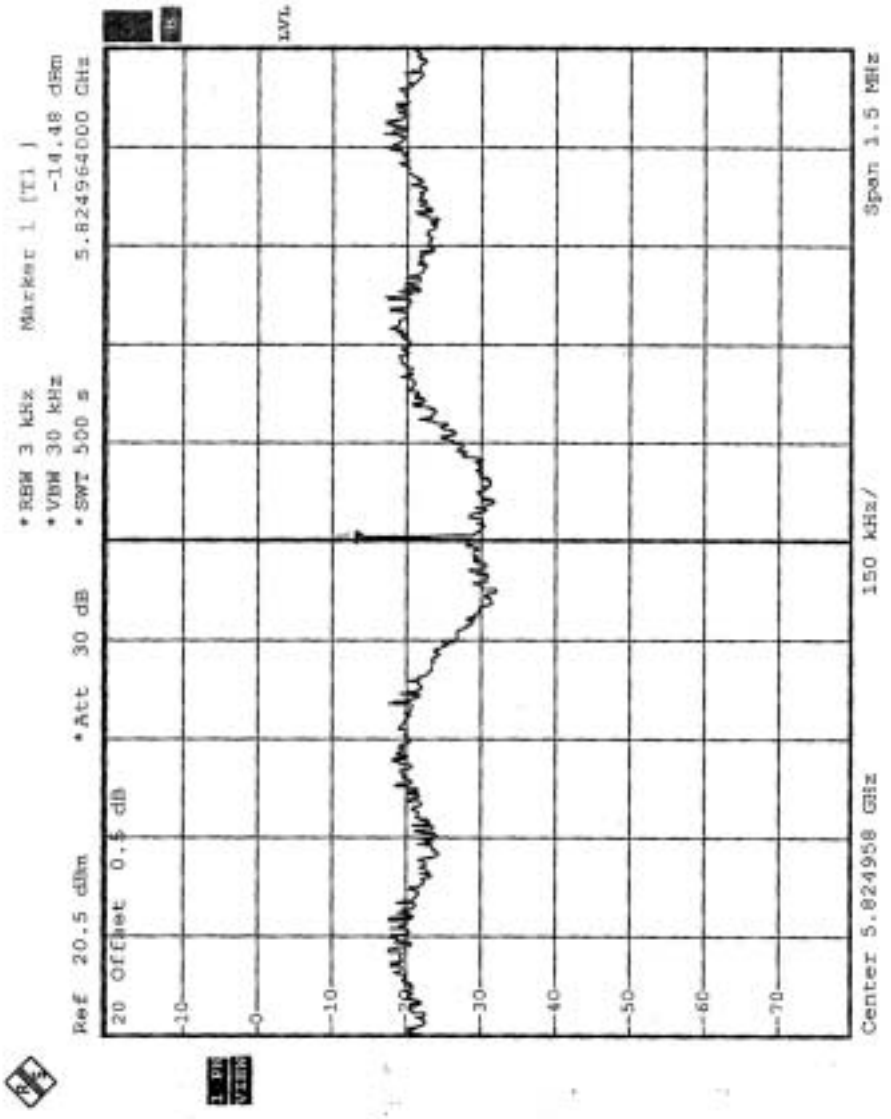
CH9


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.57 dBm
5.744964000 GHz
Center 5.744964 GHz
150 kHz/
Span 1.5 MHz

CH11


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.56 dBm
5.78496400 GHz
Center 5.784964 GHz
150 kHz/
Span 1.5 MHz
-10
0
10
20
30
40
50
60
70

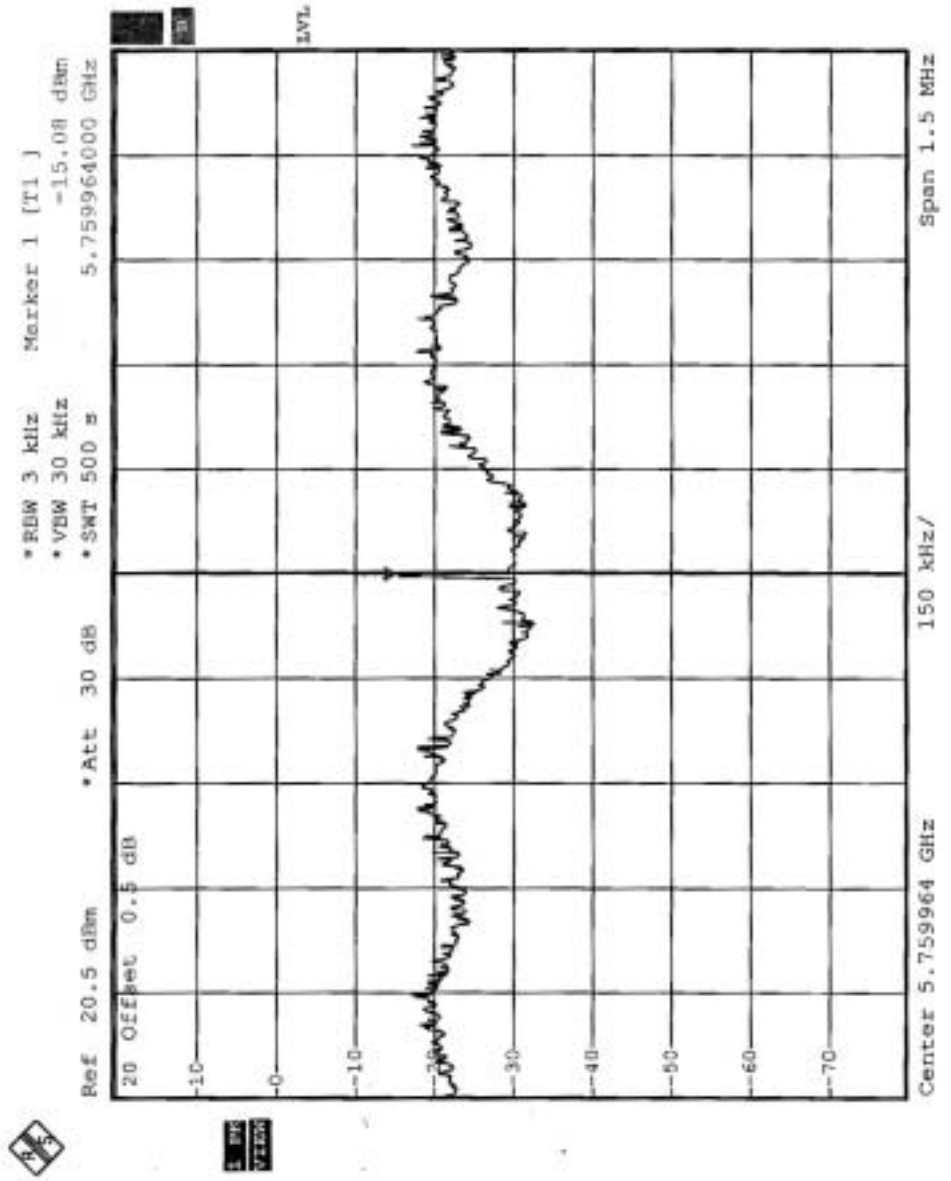
CH13


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.48 dBm
5.824964000 GHz
Center 5.824950 GHz
150 kHz/
Span 1.5 MHz

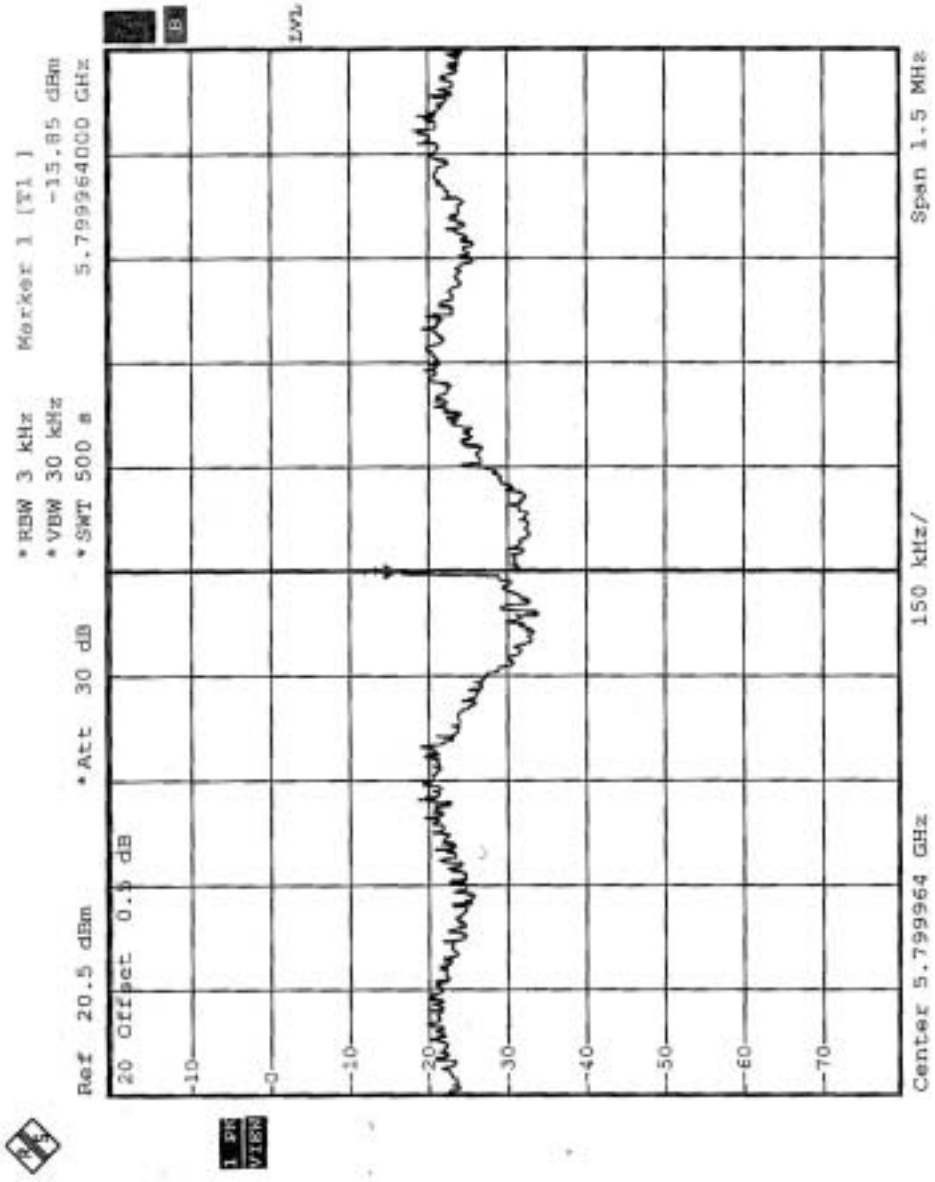
EUT	802.11a Outdoor Bridge With Internal Antenna	MODEL	BR5811b
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	57deg. C, 56%RH, 970 hPa
TEST MODE	Turbo	TEST BY	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
4	5760	-15.08	8	PASS
5	5800	-15.85	8	PASS

CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-15.08 dBm
5.759964000 GHz
Att 30 dB
Ref 20.5 dBm
Offset 0.5 dB
Center 5.759964 GHz
150 kHz/
Span 1.5 MHz

CH5

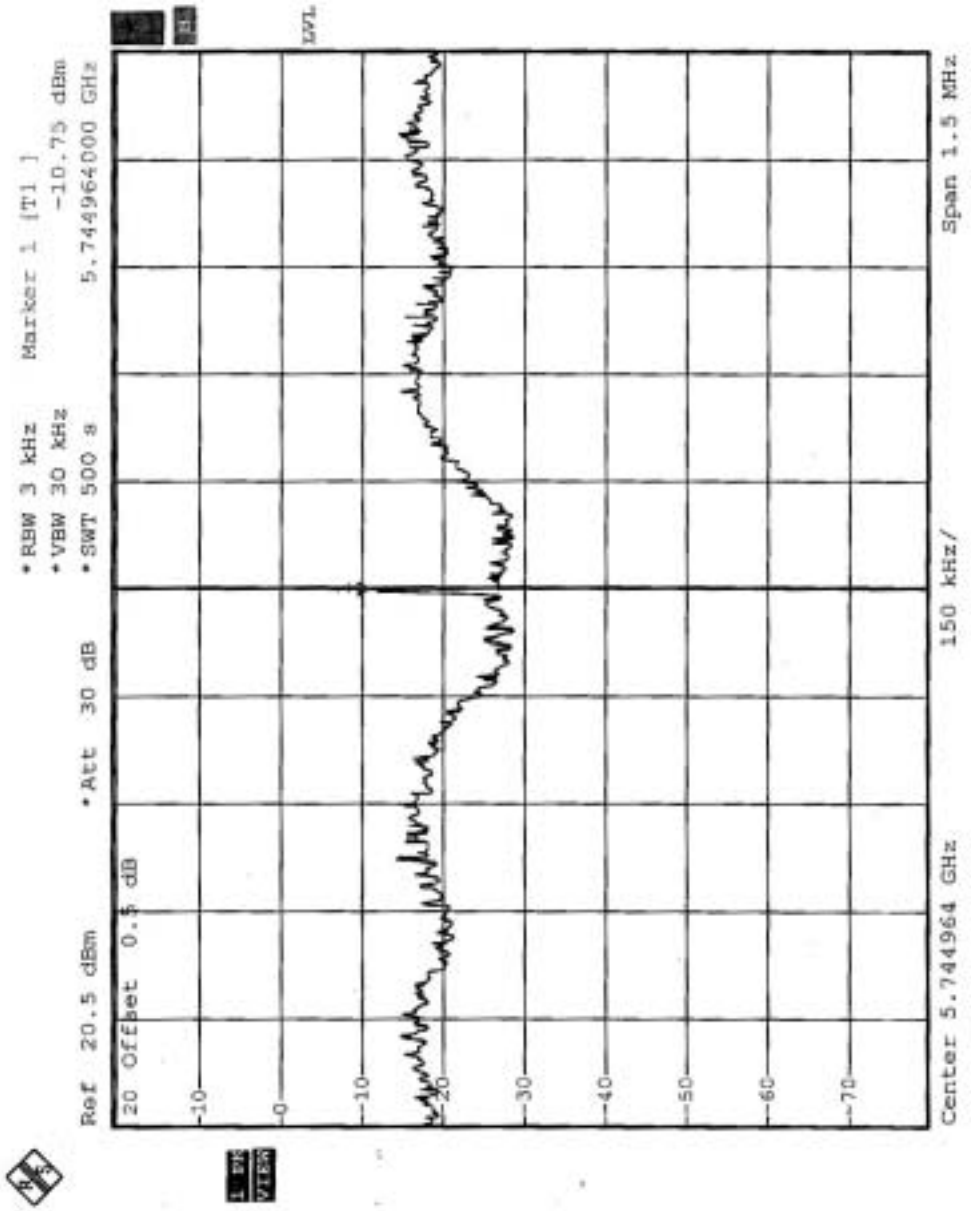

Ref 20.5 dBm
20 Offset 0.6 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.85 dBm
5.799964000 GHz
Center 5.799964 GHz
150 kHz/
Span 1.5 MHz
-10
0
10
20
30
40
50
60
70

4.10.7 TEST RESULTS (ANTENNA 3)

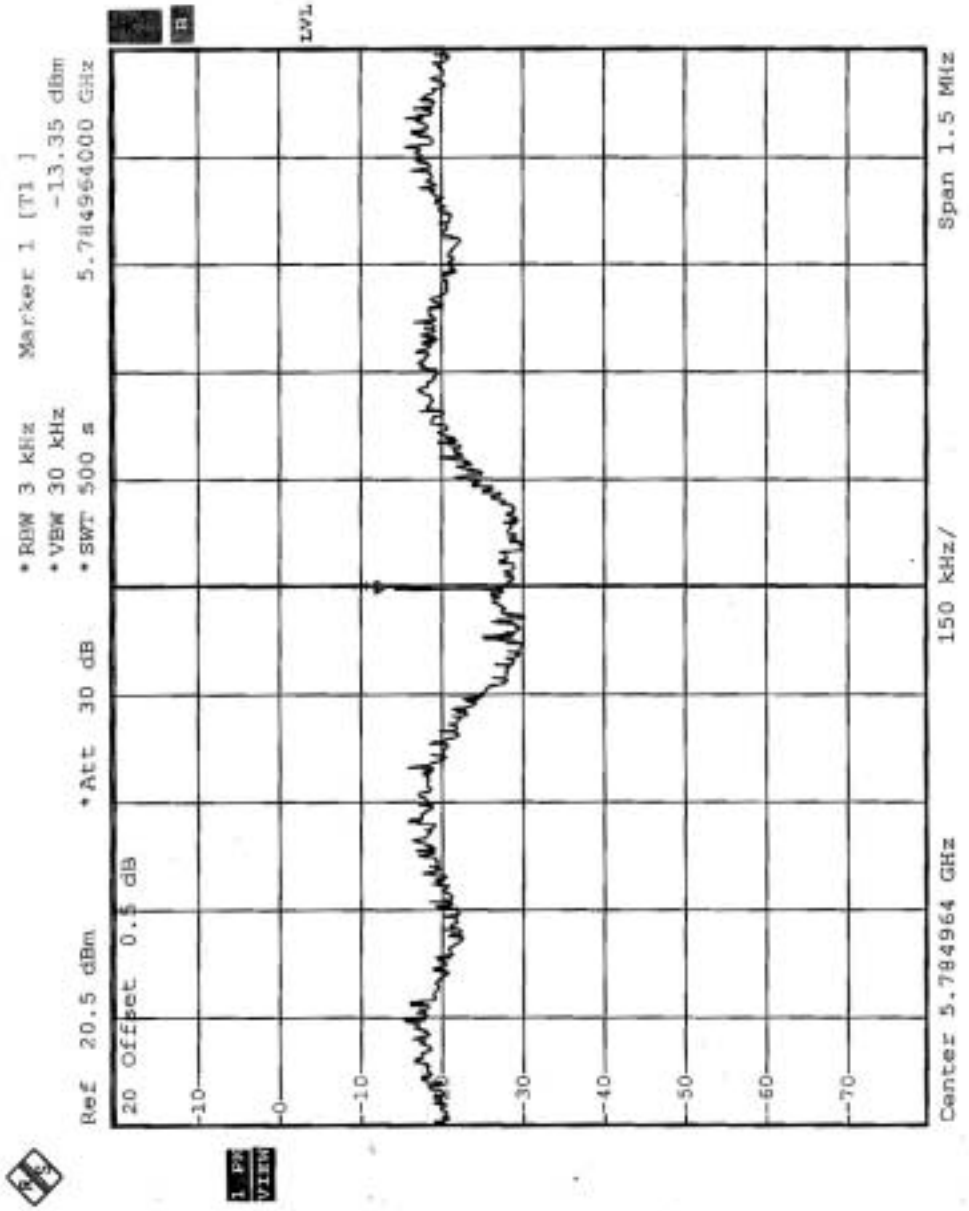
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	51deg. C, 58%RH, 970 hPa
TEST MODE	Normal	**TEST BY**	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
9	5745	-10.75	8	PASS
11	5785	-13.35	8	PASS
13	5825	-14.19	8	PASS

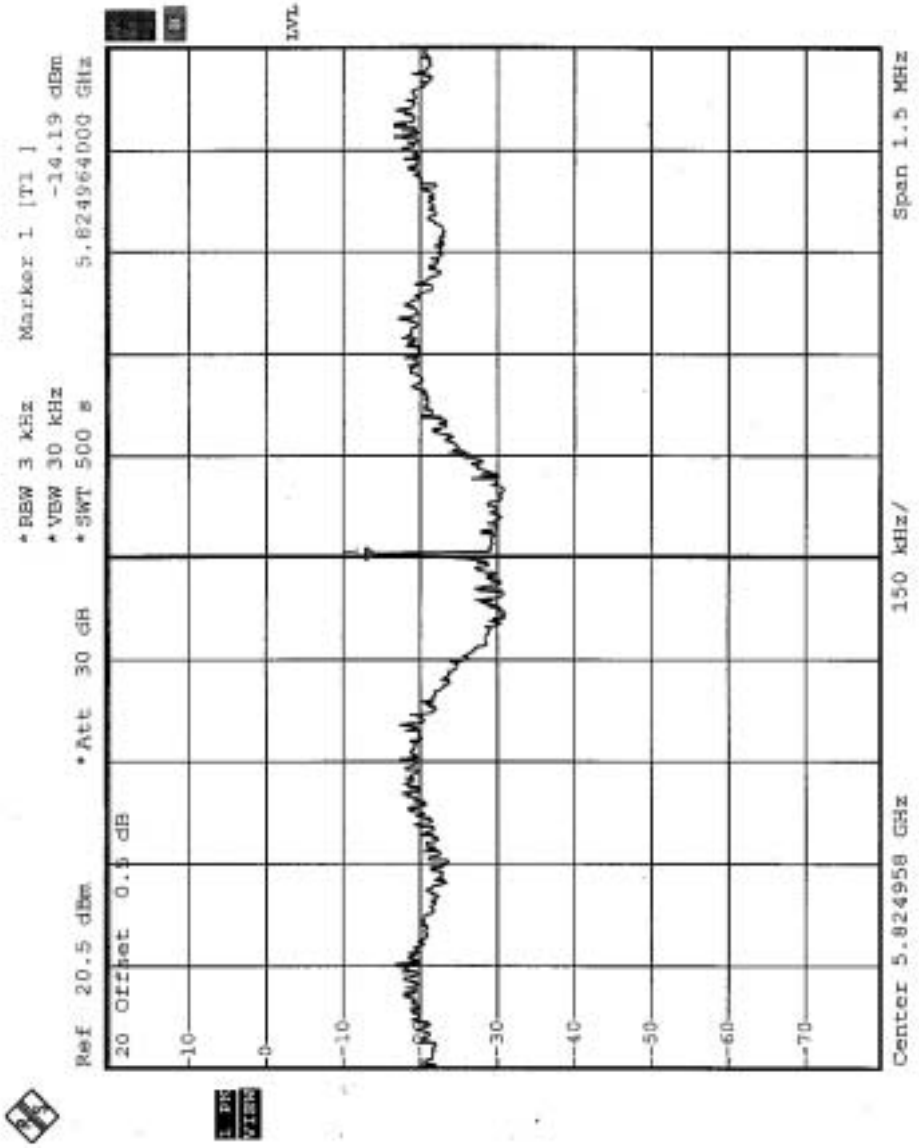
CH9


Ref 20.5 dBm
20 Offset 0.5 dB
• Att 30 dB
• RBW 3 kHz
• VBW 30 kHz
• SWT 500 s
Marker 1 [T1]
-10.75 dBm
5.749964000 GHz
Center 5.744964 GHz
150 kHz/
Span 1.5 MHz
WVL
-0
-10
-20
-30
-40
-50
-60
-70

CH11


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.35 dBm
5.784964000 GHz
Center 5.784964 GHz
150 kHz/
Span 1.5 MHz

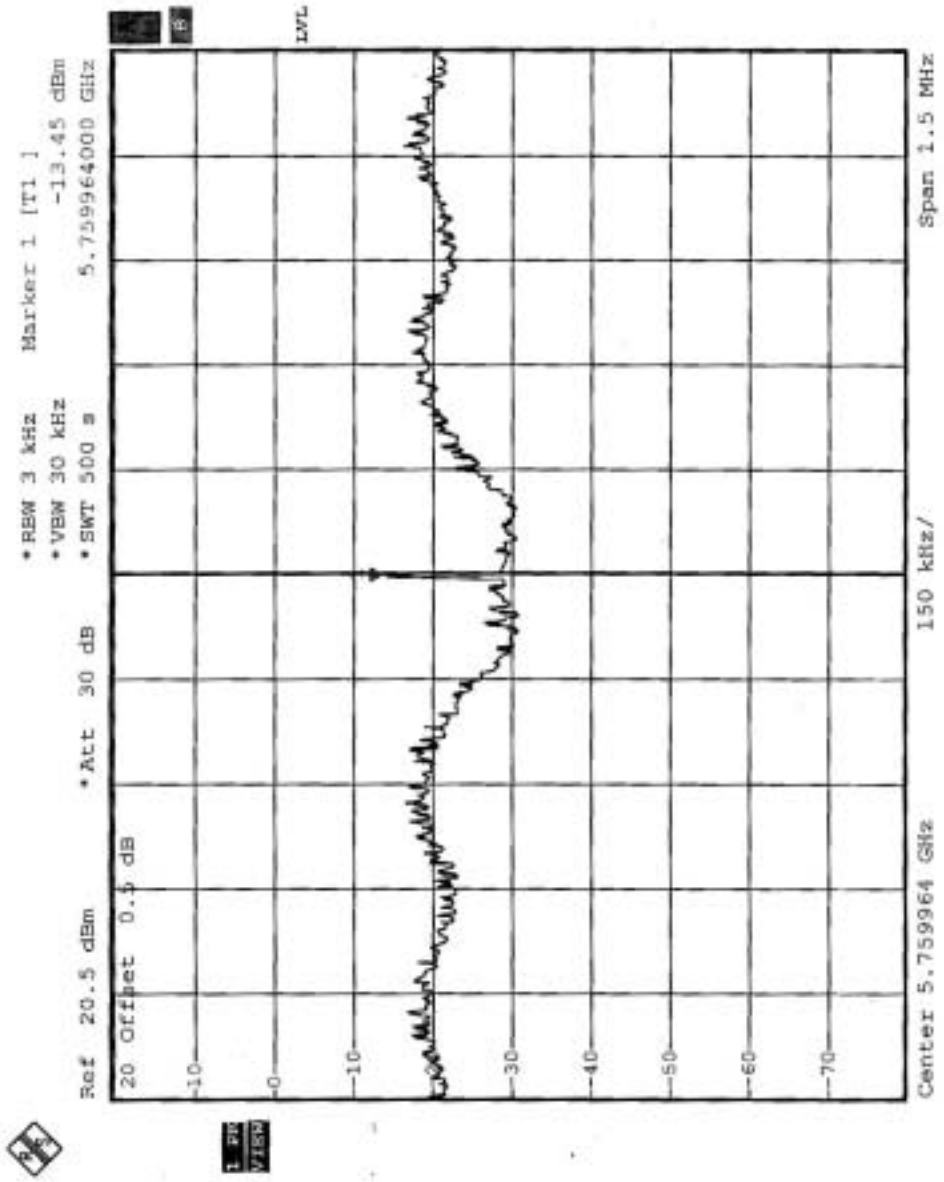
CH13


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.19 dBm
5.824964000 GHz
Center 5.824958 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

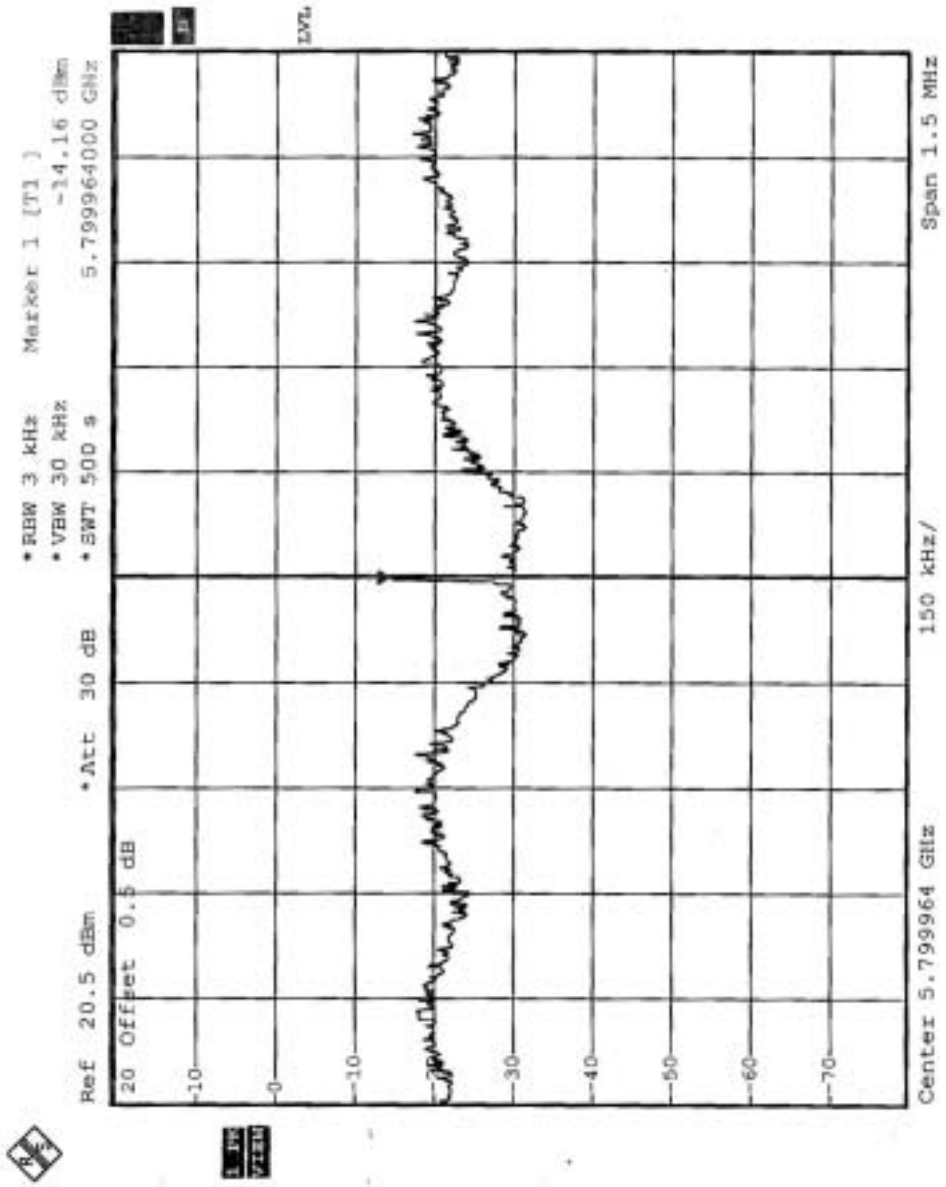
EUT	802.11a Outdoor Bridge With External Antenna	**MODEL**	BR5811bE
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	57deg. C, 56%RH, 970 hPa
TEST MODE	Turbo	**TEST BY**	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
4	5760	-13.45	8	PASS
5	5800	-14.16	8	PASS

CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-13.45 dBm
5.759964000 GHz
Att 30 dB
Ref 20.5 dBm
Offset 0.5 dB
Center 5.759964 GHz
150 kHz/
Span 1.5 MHz

CH5


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-14.16 dBm
5.799964000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
Center 5.799964 GHz
150 kHz/
Span 1.5 MHz

4.11 BAND EDGES MEASUREMENT

4.11.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

4.11.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2004

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.11.3 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 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

4.11.4 DEVIATION FROM TEST STANDARD

No deviation

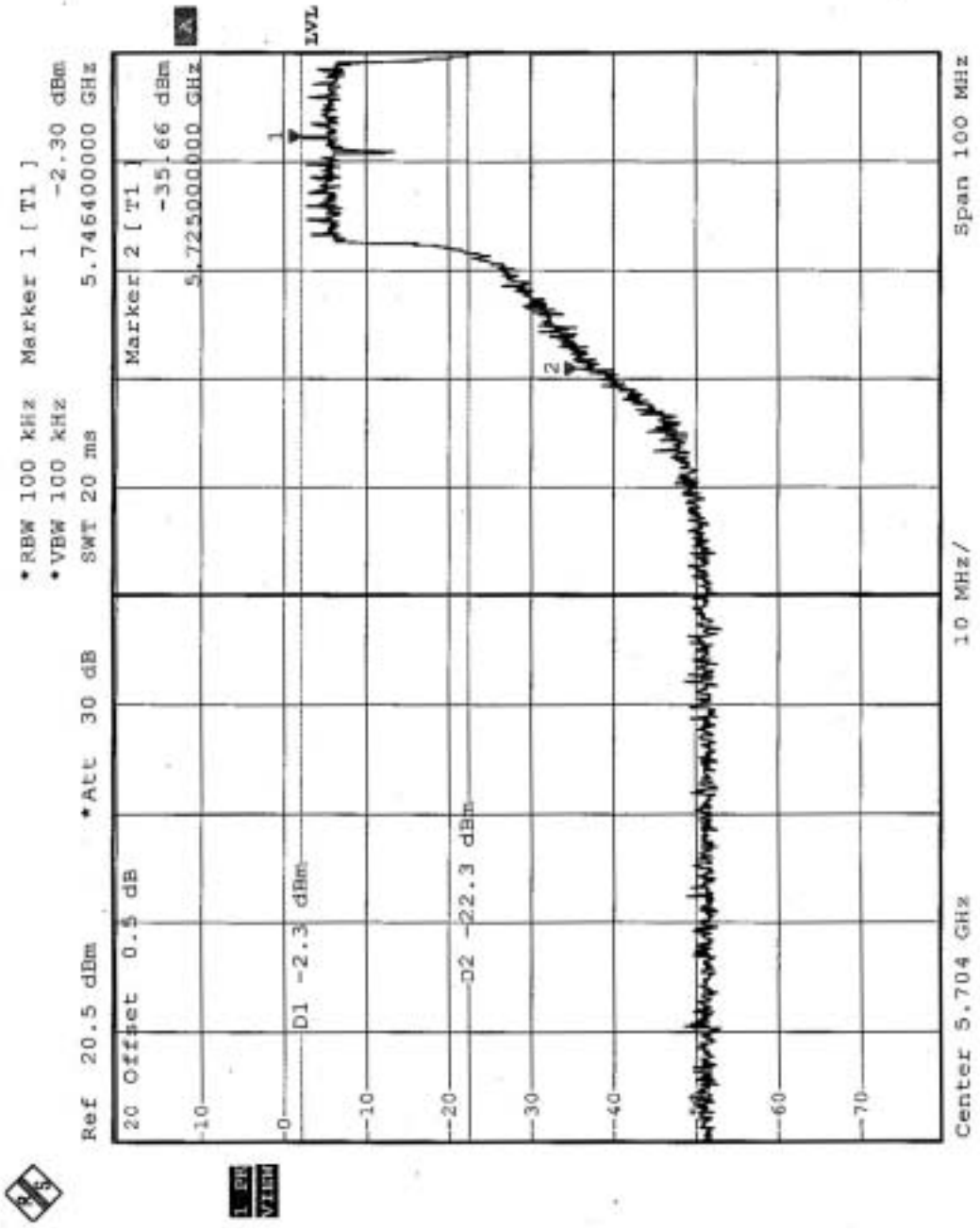
4.11.5 EUT OPERATING CONDITION

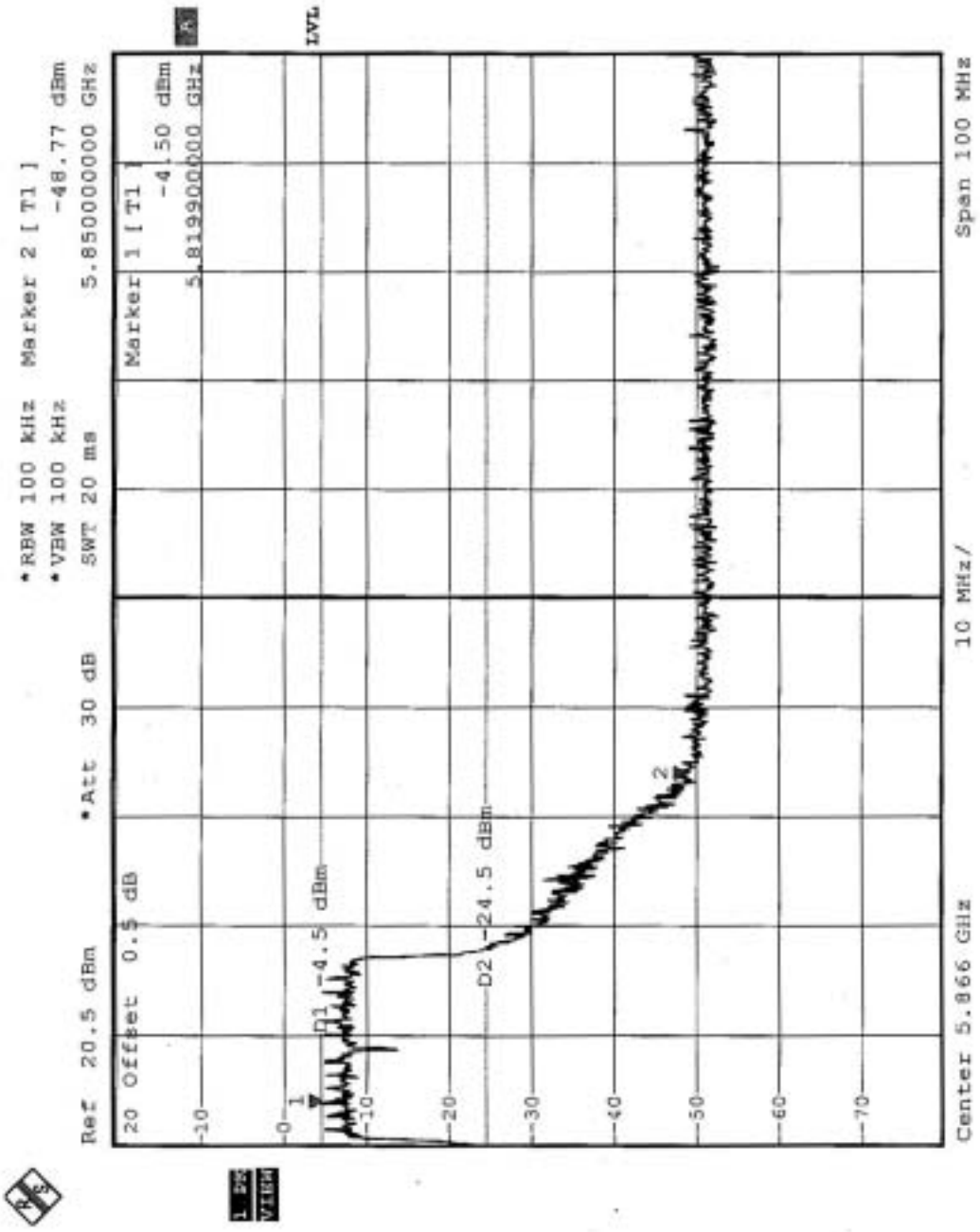
Same as Item 4.3.6

4.11.6 TEST RESULTS (Antenna 1)

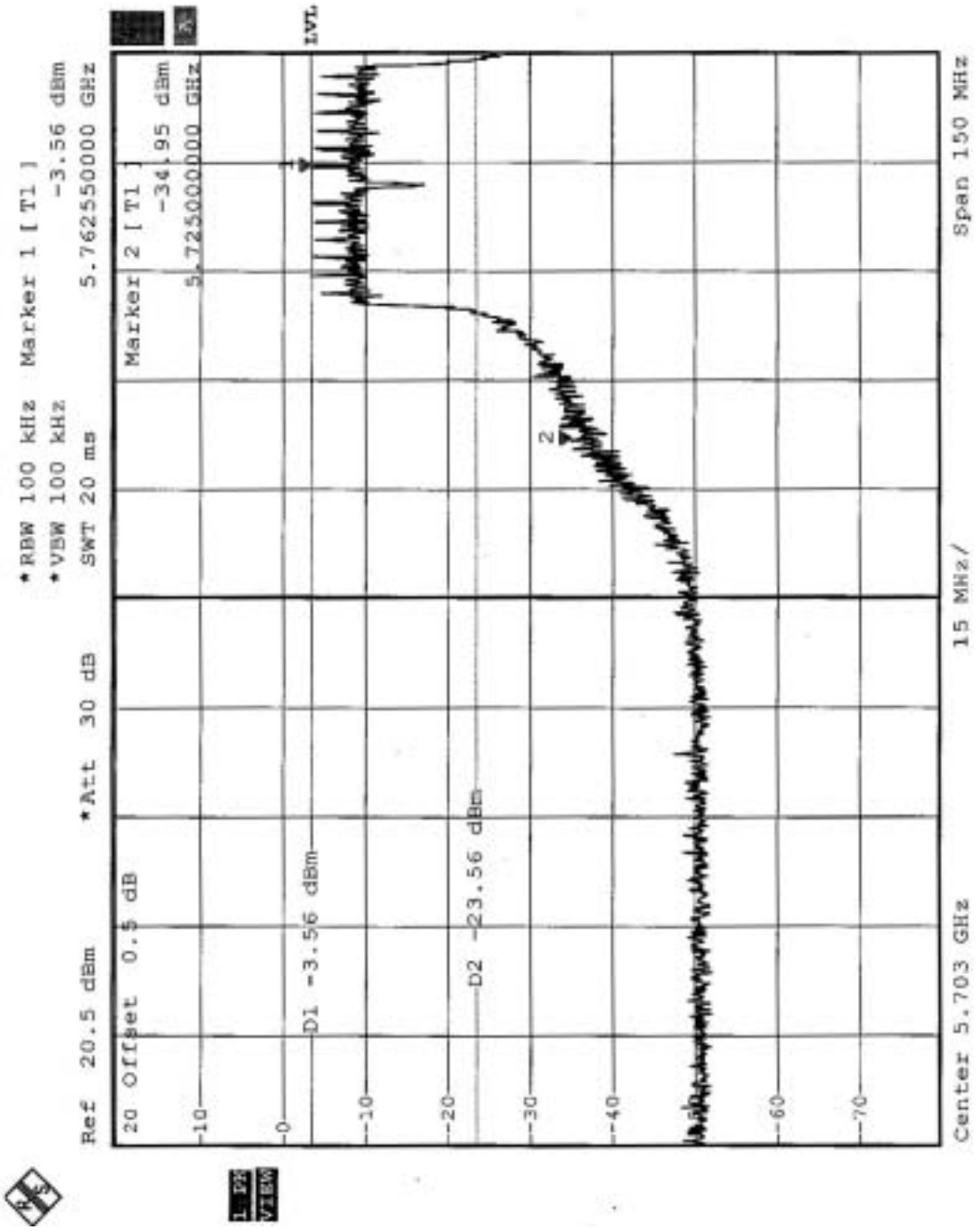
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(C).

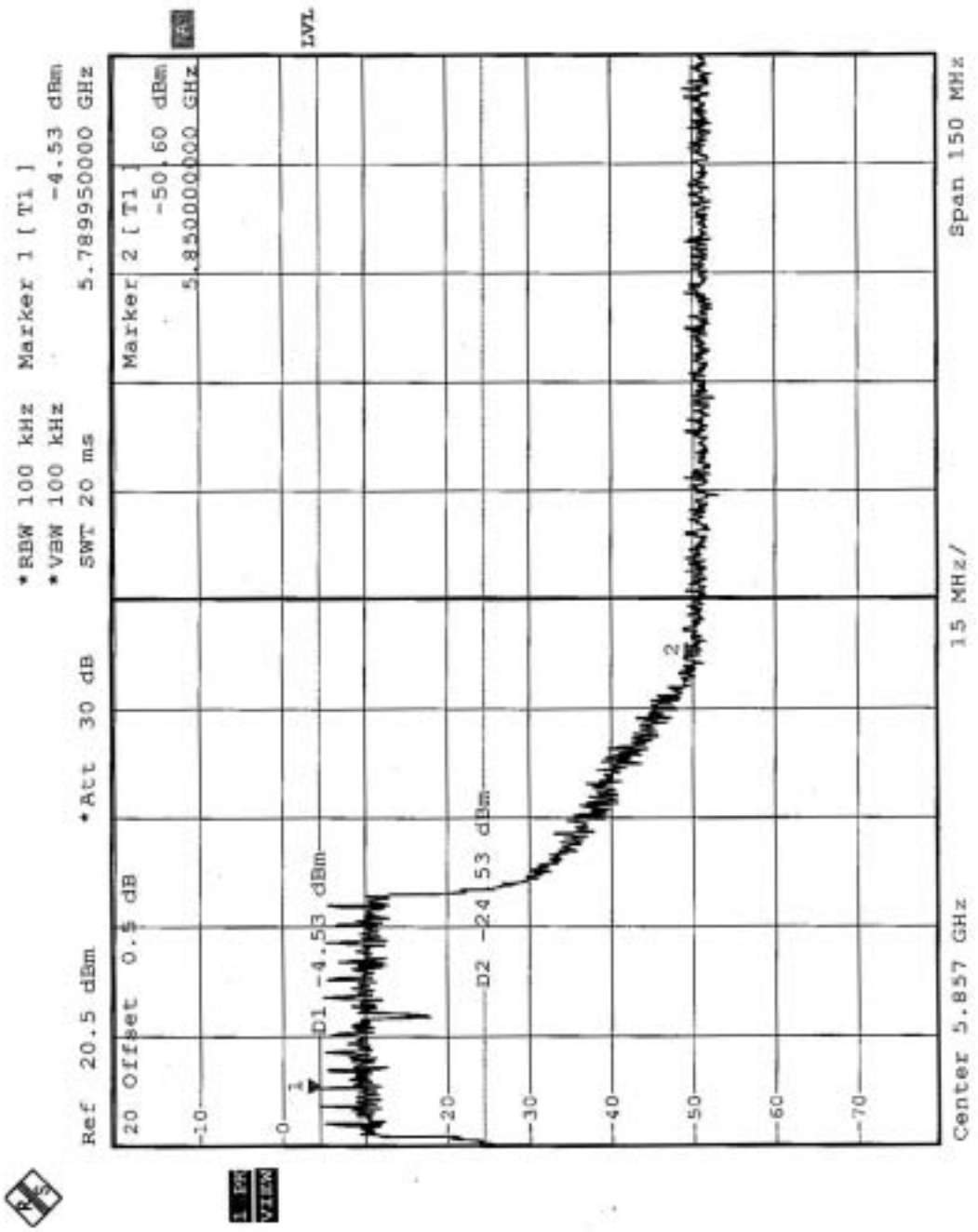
Normal Mode:


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-2.30 dBm
5.746400000 GHz
Marker 2 [T1]
-35.66 dBm
5.725000000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
D1 -2.3 dBm
D2 -22.3 dBm
Center 5.704 GHz
10 MHz/
Span 100 MHz
LVL


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Marker 2 [T1]
-48.77 dBm
5.850000000 GHz
Marker 1 [T1]
-4.50 dBm
5.819900000 GHz
D1 -4.5 dBm
D2 -24.5 dBm
Center 5.866 GHz
10 MHz/
Span 100 MHz

Turbo Mode:

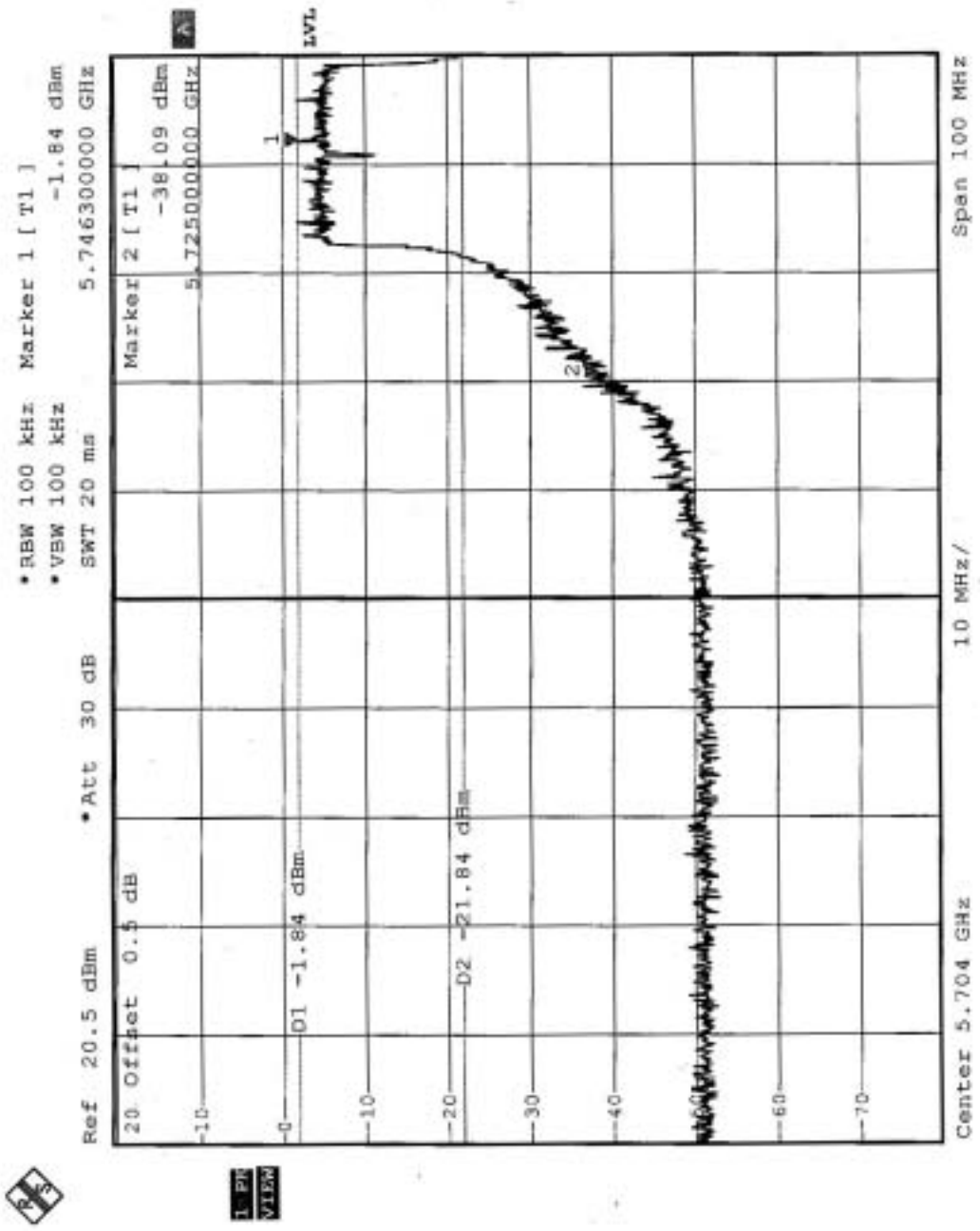

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
*Att 30 dB
Ref 20.5 dBm
20 Offset 0.5 dB
Marker 1 [T1]
-3.56 dBm
5.762550000 GHz
Marker 2 [T1]
-34.95 dBm
5.725000000 GHz
D1 -3.56 dBm
D2 -23.56 dBm
Center 5.703 GHz
15 MHz/
Span 150 MHz

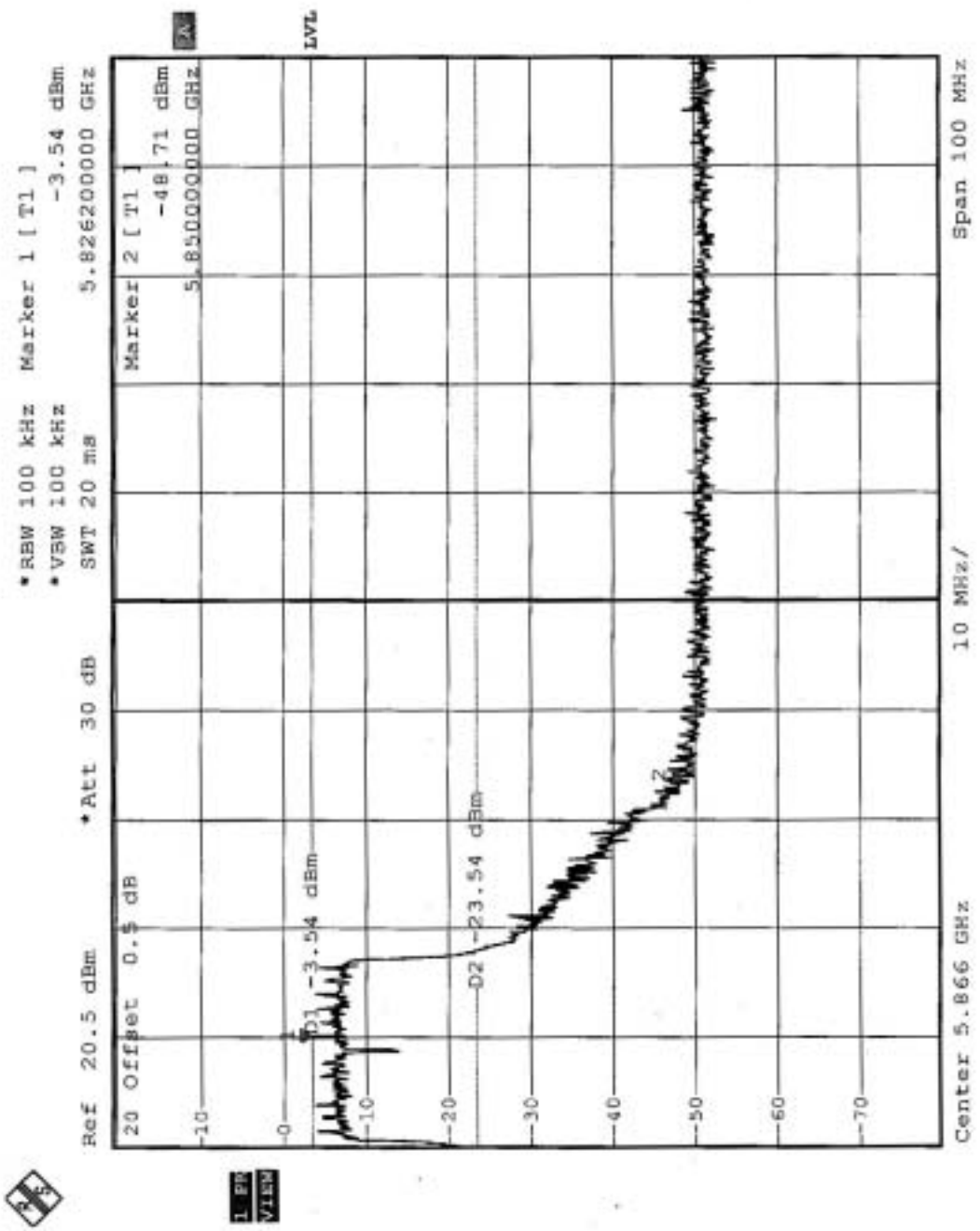

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-4.53 dBm
5.789950000 GHz
Marker 2 [T1]
-50.60 dBm
5.850000000 GHz
*Att 30 dB
Ref 20.5 dBm
20 Offset 0.5 dB
D1 -4.53 dBm
D2 -24.53 dBm
Center 5.857 GHz
15 MHz/
Span 150 MHz
LVL

4.11.7 TEST RESULTS (Antenna 3)

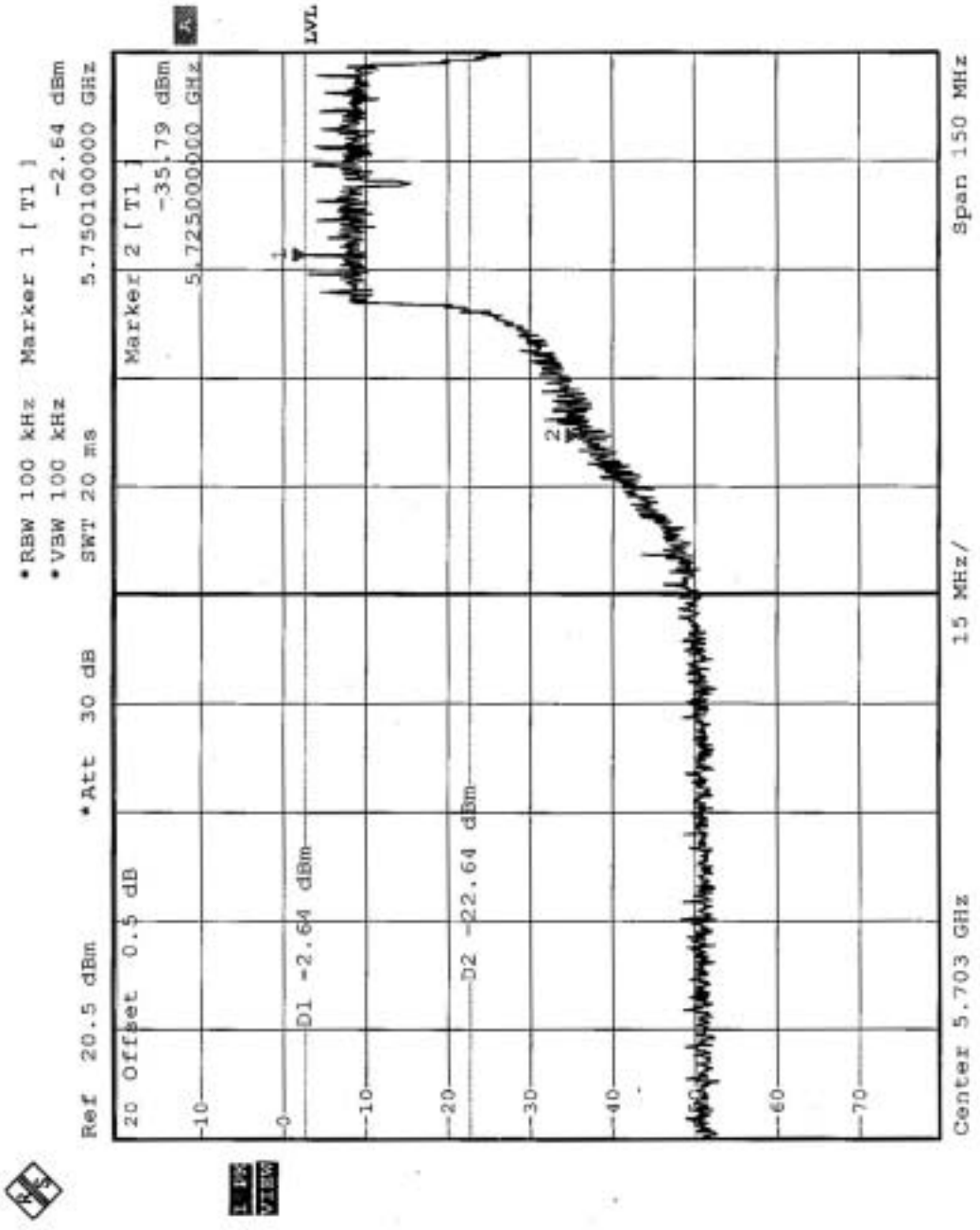
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(C).

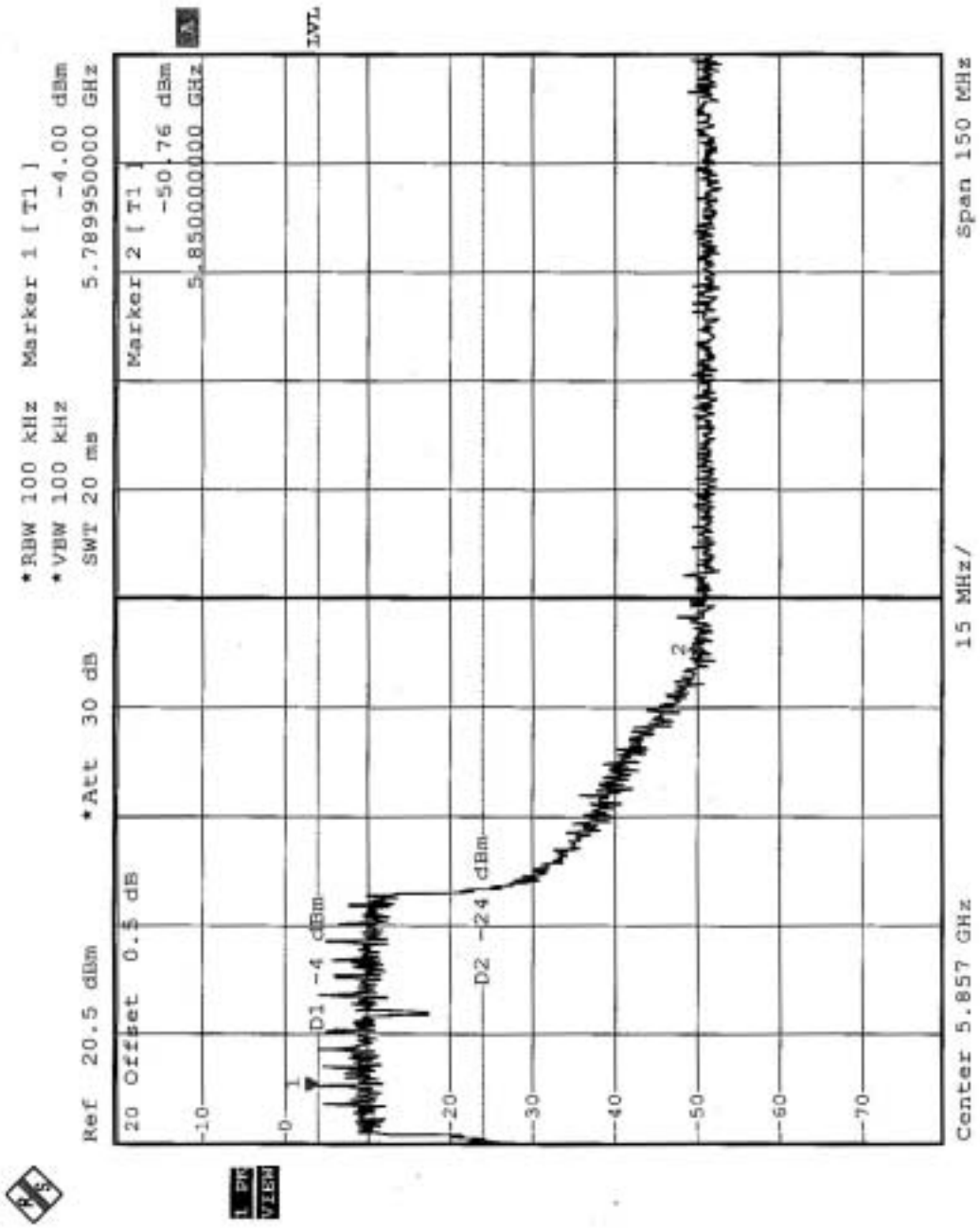
Normal Mode:


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Att 30 dB
Ref 20.5 dBm
Offset 0.5 dB
Marker 1 [T1]
-1.84 dBm
5.746300000 GHz
Marker 2 [T1]
-38.09 dBm
5.725000000 GHz
D1 -1.84 dBm
D2 -21.84 dBm
Center 5.704 GHz
10 MHz/
Span 100 MHz
LVL
1 PK VIEW


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-3.54 dBm
5.826200000 GHz
Marker 2 [T1]
-48.71 dBm
5.850000000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
Att 30 dB
D1 -3.54 dBm
D2 -23.54 dBm
Center 5.866 GHz
10 MHz/
Span 100 MHz

Turbo Mode:


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-2.64 dBm
5.750100000 GHz
Marker 2 [T1]
-35.79 dBm
5.725000000 GHz
D1 -2.64 dBm
D2 -22.64 dBm
Center 5.703 GHz
15 MHz/
Span 150 MHz
LVL
1 PK
VIEW


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-4.00 dBm
5.78995000 GHz
Marker 2 [T1]
-50.76 dBm
5.85000000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
D1 -4 dBm
D2 -24 dBm
Center 5.857 GHz
15 MHz/
Span 150 MHz
1 PK
VIEW

4.12 ANTENNA REQUIREMENT

4.12.1 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.

4.12.2 ANTENNA CONNECTED CONSTRUCTION

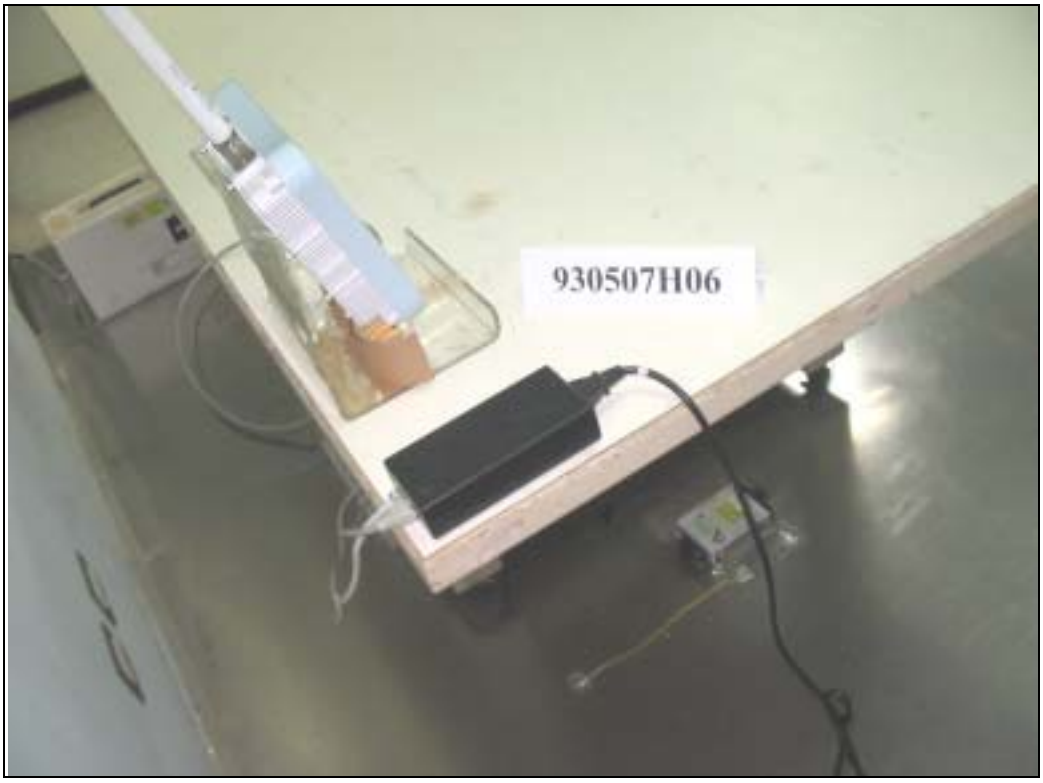
The antennas used in this product are directional, Patch Panel Antenna with Probe Pin connector and Dipole, Omni Antenna with N (Plug) connector and Directional, Patch Panel Antennas with female N (Jack) connectors.

Antenna 1: The maximum Gain of the antenna is 17.0dBi.
Antenna 2: The maximum Gain of the antenna is 8.0dBi.
Antenna 3: The maximum Gain of the antenna is 23.0dBi.

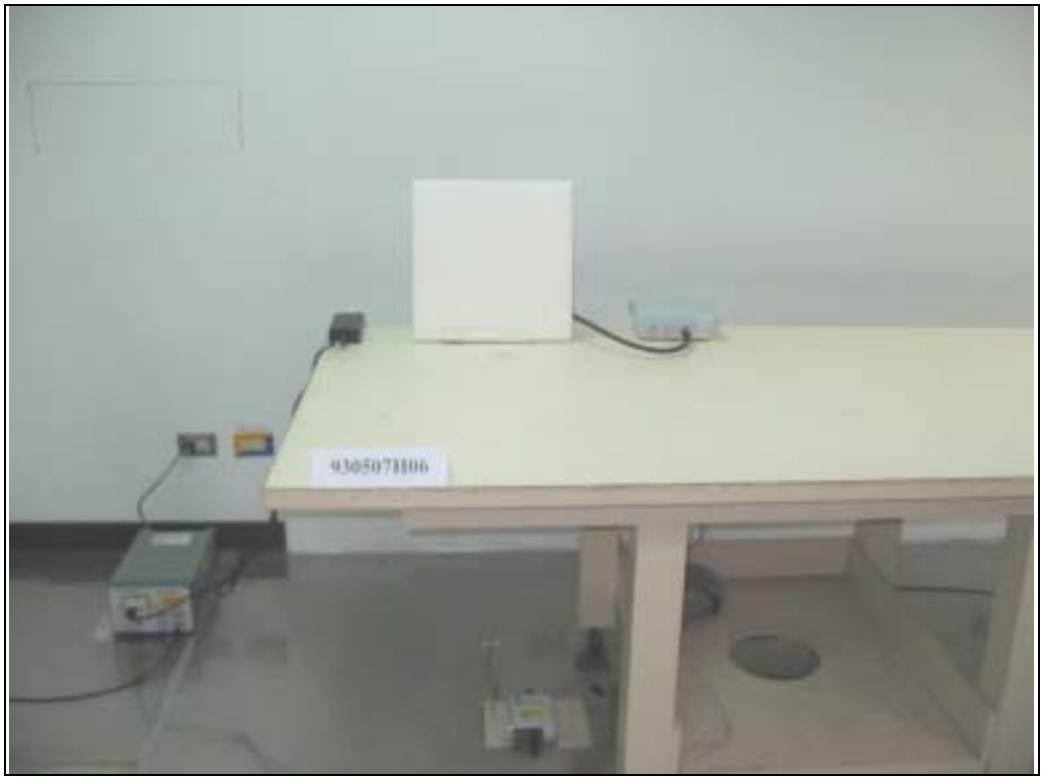
5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST Antenna 1

Antenna 2



Antenna 3



RADIATED EMISSION TEST

Antenna 1

Antenna 2

Antenna 3

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, Guide 25 or EN 45001:

USA	FCC, NVLAP, UL
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

Email: service@mail.adt.com.tw
Web Site: www.adt.com.tw

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