



EMC TEST REPORT

Report No. : EME-021367

Model No. : WAP-B11

Issued Date : Nov. 25, 2002

Applicant : D-Link Corporation
No. 8, Li-Shing Rd., VII, Science-based Industrial Park,
Hsinchu, Taiwan, R.O.C.

Test By : Intertek Testing Services Taiwan Ltd.
No. 11, Ko-Tze-Nan Chia-Tung Li, Shiang-Shan District,
Hsinchu, Taiwan, R.O.C.

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Project Engineer

Kaysi Chen

Reviewed By

Elton Chen



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Summary of Tests

2.4GHz Wireless Access Point: WAP-B11 **FCC ID: KA22002040014-1**

Test	Reference	Results
Maximum Output Power test	15.247(b)	Complies
Radiated Spurious Emission test	15.205, 15.209	Complies



1. General information

1.1 Identification of the EUT

Manufacturer	: D-Link Corporation
Product	: 2.4GHz Wireless Access Point
Model No.	: WAP-B11
FCC ID.	: KA22002040014-1
Frequency Range	: 2412~2462 MHz
Channel Number	: 11 Channels
Frequency of Each Channel	: 2412MHz, 2417MHz, 2422MHz, 2427MHz, 2432MHz, 2437MHz, 2442MHz, 2447MHz, 2452MHz, 2457MHz, 2462MHz
Type of Modulation	: CCK (11Mbps, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps)
Power Supply	: 5VDC / 1A
Sample Received	: Nov. 12, 2002
Test Date(s)	: Nov. 13, 2002 to Nov. 14, 2002

1.2 Additional information about the EUT

The WAP-B11 (IEEE 802.11b compatible 11 Mbps WLAN Access Point) is a long-range, high performance LAN product, which provides Access Point services to a 2.4 GHz RF network and bridges to an Ethernet backbone. WAP-B11 is a highly integrated Access Point designed to combine legacy LANs with wireless LANs.

We verified that model No. DWL-900 is series model to model No. WAP-B11, for these two models are identical in hardware aspect and the different is in antenna only. (The EUT with two antennas and the series model with single antenna).

The model WA1006 and WA101 are identical to model WAP-B11 (EUT), the different model number serves as marketing strategy.

We measured the Maximum Output Power test, Radiated Spurious test and Band-edge test of these two models and recorded the measurements in this report.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"



1.3 Antenna description

The antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector.

Antenna Gain : 1.7dBi

Antenna Type : Dipole

Connector Type : Reverse SMA

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.
Notebook	HP	XE ₃	TW20705468

Data Cable:

USB Cable 0.9m length × 1

RJ-45 Category 5 UTP cable 20m length × 1



2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Section §15.205, §15.207, §15.209, §15.247 and ANSI C63.4/1992.

The AC power conducted emissions was investigated over the frequency range from 0.45MHz to 30MHz using a receiver bandwidth of 9kHz. (15.207 paragraph)

Radiated emissions were investigated cover the frequency range from 30MHz to 1000MHz using a receiver RBW of 120kHz record QP reading, and the frequency over 1GHz using a spectrum analyzer RBW of 1MHz and 10Hz VBW record Average reading. (15.209 paragraph), the Peak reading recorded also on the report.

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of this frequency band were all meet limit requirement, thus we evaluate the EUT pass the specified test.

The EUT setup configurations please refer to the photo of test configuration in item.

2.2 Operation mode

Connect the EUT and Notebook with RJ-45 UTP cable 20m length than run the program "SNMPmanager" under windows OS.

The EUT transmitted continuously during all the tests.



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2.4 Test equipment

Equipment	Brand	Frequency range	Model No.	Series No.	Last Cal.Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	825788/014	May 24, 2002
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	825428/005	June 10, 2002
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	100137	July 10, 2002
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	100186	Oct. 9, 2002
Horn Antenna	EMCO	1GHz~18GHz	3115	9906-5890	Sep. 19, 2002
Horn Antenna	SCHWARZBECK	14GHz~40GHz	BBHA 9170	159	June 20, 2002
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	3111	June 20, 2002
Turn Table	HDGmbH	N/A	DS 420S	420/669/01	N/A
Antenna Tower	HDGmbH	N/A	MA 240	240/573	N/A
Microwave Amplifier	Agilent	2GHz~26.5GHz	8348A	3111A00567	Dec. 20, 2001
RF Power Meter	Boonton	10kHz~100GHz	4231A	79401	May 22, 2002
Power Sensor	Boonton	30MHz~8GHz	51011-EMC	32482	May 25, 2002

Note:

1. The calibration interval of the above instruments is 12 months.



3. Maximum Output Power test

3.1 Operating environment

Temperature: 22
Relative Humidity: 60 %

3.2 Test setup & procedure

The power output per FCC §15.247(b) was measured on the EUT using a 50 ohm SMA cable connected to power meter via power sensor. Power was read directly and cable loss correction (1dB) was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel).

3.3 Measured data of Maximum Output Power test results

Channel	Frequency (MHz)	C.B.L. (dB)	Reading (dBm)	Power Output		Limit (W)
				(dBm)	(mW)	
Lowest	2412	1	14.81	15.81	38.106	1
Middle	2437	1	14.54	15.54	35.809	1
Highest	2462	1	14.69	15.69	37.068	1

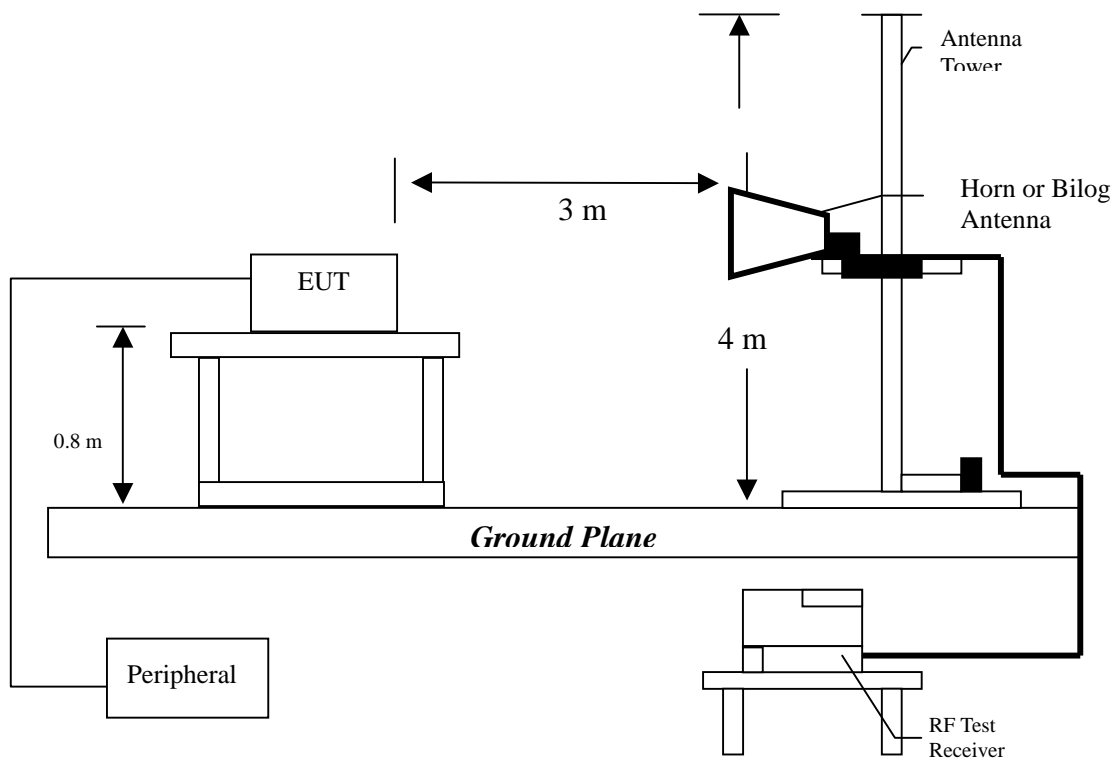
4. Radiated Emission test

4.1 Operating environment

Temperature: 25
Relative Humidity: 59 %

4.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer Resolution Bandwidth is 100kHz or greater for frequencies 30MHz to 1GHz, 1MHz – for frequencies above 1GHz.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.



4.3 Emission limits

The spurious Emission shall test through the 10th harmonic. 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).

Frequency (MHz)	Limits (dB μ V/m@3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Uncertainty was calculated in accordance with NAMAS NIS 81.

Expanded uncertainty (k=2) of radiated emission measurement is ± 3.078 dB.

Expanded uncertainty (k=2) of conducted emission measurement is ± 2.02 dB.



4.4 Radiated spurious emission test data

4.4.1 Measurement results: frequencies equal to or less than 1 GHz

EUT : WAP-B11
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
82.40000	QP	V	9.46	27.66	37.12	40.00	-2.88
132.60000	QP	V	13.36	27.04	40.40	43.50	-3.10
142.30000	QP	V	14.29	26.61	40.90	43.50	-2.60
172.60000	QP	V	14.21	27.09	41.30	43.50	-2.20
177.40000	QP	V	14.21	27.29	41.50	43.50	-2.00
748.10000	QP	V	23.32	14.18	37.50	46.00	-8.50
117.50000	QP	H	11.89	20.51	32.40	43.50	-11.10
143.90000	QP	H	14.29	18.01	32.30	43.50	-11.20
172.60000	QP	H	14.21	23.09	37.30	43.50	-6.20
187.70000	QP	H	13.55	22.85	36.40	43.50	-7.10
249.80000	QP	H	12.86	22.14	35.00	46.00	-11.00
748.00000	QP	H	23.32	15.78	39.10	46.00	-6.90

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : WAP-B11

Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
82.50000	QP	V	9.46	27.34	36.80	40.00	-3.20
132.40000	QP	V	13.36	26.49	39.85	43.50	-3.65
142.41000	QP	V	14.29	25.96	40.25	43.50	-3.25
172.61000	QP	V	14.21	27.00	41.21	43.50	-2.29
178.10000	QP	V	14.21	26.45	40.66	43.50	-2.84
748.11000	QP	V	23.32	15.22	38.54	46.00	-7.46
118.10000	QP	H	11.89	20.80	32.69	43.50	-10.81
142.50000	QP	H	14.29	19.45	33.74	43.50	-9.76
172.51000	QP	H	14.21	22.41	36.62	43.50	-6.88
188.05000	QP	H	13.55	23.70	37.25	43.50	-6.25
250.04000	QP	H	13.17	22.27	35.44	46.00	-10.56
748.22000	QP	H	23.32	16.19	39.51	46.00	-6.49

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : WAP-B11
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
82.40000	QP	V	9.46	27.39	36.85	40.00	-3.15
132.00000	QP	V	13.36	24.69	38.05	43.50	-5.45
142.11000	QP	V	14.29	25.58	39.87	43.50	-3.63
172.65000	QP	V	14.21	26.50	40.71	43.50	-2.79
178.25000	QP	V	14.21	25.33	39.54	43.50	-3.96
748.26000	QP	V	23.32	14.70	38.02	46.00	-7.98
118.24000	QP	H	11.89	22.06	33.95	43.50	-9.55
142.34000	QP	H	14.29	20.46	34.75	43.50	-8.75
172.60000	QP	H	14.21	22.24	36.45	43.50	-7.05
187.95000	QP	H	13.55	24.49	38.04	43.50	-5.46
249.89000	QP	H	12.86	22.39	35.25	46.00	-10.75
748.22000	QP	H	23.32	15.10	38.42	46.00	-7.58

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
66.40000	QP	V	12.49	21.41	33.90	40.00	-6.10
91.80000	QP	V	10.12	24.48	34.60	43.50	-8.90
122.40000	QP	V	12.89	25.51	38.40	43.50	-5.10
162.31000	QP	V	14.92	24.58	39.50	43.50	-4.00
178.10000	QP	V	14.21	25.49	39.70	43.50	-3.80
748.01000	QP	V	23.32	12.68	36.00	46.00	-10.00
82.50000	QP	H	9.46	14.54	24.00	40.00	-16.00
122.41000	QP	H	12.89	16.91	29.80	43.50	-13.70
142.32000	QP	H	14.29	18.31	32.60	43.50	-10.90
178.20000	QP	H	14.21	21.19	35.40	43.50	-8.10
234.20000	QP	H	12.35	24.56	36.91	46.00	-9.09
748.21000	QP	H	23.32	13.23	36.55	46.00	-9.45

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900

Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
67.30000	QP	V	12.22	21.88	34.10	40.00	-5.90
92.60000	QP	V	10.24	25.53	35.77	43.50	-7.73
122.30000	QP	V	12.89	25.36	38.25	43.50	-5.25
162.30000	QP	V	14.92	25.60	40.52	43.50	-2.98
177.40000	QP	V	14.21	25.88	40.09	43.50	-3.41
748.00000	QP	V	23.32	13.25	36.57	46.00	-9.43
82.40000	QP	H	9.46	15.94	25.40	40.00	-14.60
122.30000	QP	H	12.89	17.21	30.10	43.50	-13.40
142.30000	QP	H	14.29	19.61	33.90	43.50	-9.60
177.40000	QP	H	14.21	20.29	34.50	43.50	-9.00
234.10000	QP	H	12.35	25.15	37.50	46.00	-8.50
748.00000	QP	H	23.32	14.28	37.60	46.00	-8.40

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
67.30000	QP	V	12.22	23.58	35.80	40.00	-4.20
92.60000	QP	V	10.24	25.96	36.20	43.50	-7.30
122.30000	QP	V	12.89	26.21	39.10	43.50	-4.40
162.30000	QP	V	14.92	27.38	42.30	43.50	-1.20
177.40000	QP	V	14.21	27.39	41.60	43.50	-1.90
748.00000	QP	V	23.32	13.68	37.00	46.00	-9.00
82.40000	QP	H	9.46	16.64	26.10	40.00	-13.90
122.30000	QP	H	12.89	19.01	31.90	43.50	-11.60
142.30000	QP	H	14.29	20.31	34.60	43.50	-8.90
177.40000	QP	H	14.21	20.69	34.90	43.50	-8.60
234.10000	QP	H	12.35	22.45	34.80	46.00	-11.20
748.00000	QP	H	23.32	14.88	38.20	46.00	-7.80

Remark:

1. Corrected Level = Reading Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



4.4.2 Measurement results: frequency above 1GHz

The radiated spurious emissions at

Frequency(MHz)	Margin
4075.36	-2.11
6113.92	-2.16
4815.7	-2.04

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : WAP-B11
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2038	PK	V	0	29.36	23.7	53.06	74	-20.94
2038	AV	V	0	29.36	20.12	49.48	54	-4.52
4076	PK	V	28.02	34.59	38.22	44.79	74	-29.21
4076	AV	V	28.02	34.59	27.43	34	54	-20
6114	PK	V	28.02	37.74	-	-	74	-
6114	AV	V	28.02	37.74	-	-	54	-
4824	PK	V	28.02	35.47	41.24	48.69	74	-25.31
4824	AV	V	28.02	35.47	29.79	37.24	54	-16.76
7236	PK	V	28.02	38.42	40.07	50.47	74	-23.53
7236	AV	V	28.02	38.42	27.35	37.75	54	-16.25
9648	PK	V	28.02	41.35	43.82	57.15	74	-16.85
9648	AV	V	28.02	41.35	35.26	48.59	54	-5.41
12060	PK	V	28.02	43.38	-	-	74	-
12060	AV	V	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : WAP-B11
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2038	PK	H	0	29.36	22.88	52.24	74	-21.76
2038	AV	H	0	29.36	17.81	47.17	54	-6.83
4076	PK	H	28.02	34.59	35.98	42.55	74	-31.45
4076	AV	H	28.02	34.59	26.51	33.08	54	-20.92
6114	PK	H	28.02	37.74	-	-	74	-
6114	AV	H	28.02	37.74	-	-	54	-
4824	PK	H	28.02	35.47	40.01	47.46	74	-26.54
4824	AV	H	28.02	35.47	28.77	36.22	54	-17.78
7236	PK	H	28.02	38.42	-	-	74	-
7236	AV	H	28.02	38.42	-	-	54	-
9648	PK	H	28.02	41.35	42.22	55.55	74	-18.45
9648	AV	H	28.02	41.35	29.74	43.07	54	-10.93
12060	PK	H	28.02	43.38	-	-	74	-
12060	AV	H	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2063	PK	V	0	29.36	24.5	53.86	74	-20.14
2063	AV	V	0	29.36	22.06	51.42	54	-2.58
4126	PK	V	28.02	34.59	39.54	46.11	74	-27.89
4126	AV	V	28.02	34.59	27.86	34.43	54	-19.57
6189	PK	V	28.02	37.74	-	-	74	-
6189	AV	V	28.02	37.74	-	-	54	-
4874	PK	V	28.02	35.47	40.09	47.54	74	-26.46
4874	AV	V	28.02	35.47	27.33	34.78	54	-19.22
7311	PK	V	28.02	38.42	42.03	52.43	74	-21.57
7311	AV	V	28.02	38.42	29.32	39.72	54	-14.28
9748	PK	V	28.02	41.35	41.16	54.49	74	-19.51
9748	AV	V	28.02	41.35	30.61	43.94	54	-10.06
12185	PK	V	28.02	43.38	-	-	74	-
12185	AV	V	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2063	PK	H	0	29.36	22.62	51.98	74	-22.02
2063	AV	H	0	29.36	19.94	49.3	54	-4.7
4126	PK	H	28.02	34.59	38.92	45.49	74	-28.51
4126	AV	H	28.02	34.59	27.33	33.9	54	-20.1
6189	PK	H	28.02	37.74	-	-	74	-
6189	AV	H	28.02	37.74	-	-	54	-
4874	PK	H	28.02	35.47	38.44	45.89	74	-28.11
4874	AV	H	28.02	35.47	27.65	35.1	54	-18.9
7311	PK	H	28.02	38.42	-	-	74	-
7311	AV	H	28.02	38.42	-	-	54	-
9748	PK	H	28.02	41.35	39.66	52.99	74	-21.01
9748	AV	H	28.02	41.35	27.17	40.5	54	-13.5
12185	PK	H	28.02	43.38	-	-	74	-
12185	AV	H	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : WAP-B11
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2088	PK	V	0	29.36	24.5	53.86	74	-20.14
2088	AV	V	0	29.36	21.06	50.42	54	-3.58
4176	PK	V	28.02	34.59	35.91	42.48	74	-31.52
4176	AV	V	28.02	34.59	26.79	33.36	54	-20.64
6264	PK	V	28.02	37.74	-	-	74	-
6264	AV	V	28.02	37.74	-	-	54	-
4924	PK	V	28.02	35.47	39.7	47.15	74	-26.85
4924	AV	V	28.02	35.47	28.17	35.62	54	-18.38
7386	PK	V	28.02	38.42	40.35	50.75	74	-23.25
7386	AV	V	28.02	38.42	28.26	38.66	54	-15.34
9848	PK	V	28.02	41.55	41.31	54.84	74	-19.16
9848	AV	V	28.02	41.55	31.5	45.03	54	-8.97
12310	PK	V	28.02	43.75	-	-	74	-
12310	AV	V	28.02	43.75	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : WAP-B11
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2088	PK	H	0	29.36	23.49	52.85	74	-21.15
2088	AV	H	0	29.36	20.38	49.74	54	-4.26
4176	PK	H	28.02	34.59	38.09	44.66	74	-29.34
4176	AV	H	28.02	34.59	26.76	33.33	54	-20.67
6264	PK	H	28.02	37.74	-	-	74	-
6264	AV	H	28.02	37.74	-	-	54	-
4924	PK	H	28.02	35.47	-	-	74	-
4924	AV	H	28.02	35.47	-	-	54	-
7386	PK	H	28.02	38.42	-	-	74	-
7386	AV	H	28.02	38.42	-	-	54	-
9848	PK	H	28.02	41.55	40.29	53.82	74	-20.18
9848	AV	H	28.02	41.55	28.56	42.09	54	-11.91
12310	PK	H	28.02	43.75	-	-	74	-
12310	AV	H	28.02	43.75	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2038	PK	V	0	29.36	23.93	53.29	74	-20.71
2038	AV	V	0	29.36	21.31	50.67	54	-3.33
4076	PK	V	28.02	34.59	37.55	44.12	74	-29.88
4076	AV	V	28.02	34.59	26.12	32.69	54	-21.31
6114	PK	V	28.02	37.74	-	-	74	-
6114	AV	V	28.02	37.74	-	-	54	-
4824	PK	V	28.02	35.47	39.95	47.4	74	-26.6
4824	AV	V	28.02	35.47	28.1	35.55	54	-18.45
7236	PK	V	28.02	38.42	40.57	50.97	74	-23.03
7236	AV	V	28.02	38.42	28.18	38.58	54	-15.42
9648	PK	V	28.02	41.35	41.13	54.46	74	-19.54
9648	AV	V	28.02	41.35	30.16	43.49	54	-10.51
12060	PK	V	28.02	43.38	-	-	74	-
12060	AV	V	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2038	PK	H	0	29.36	23.76	53.12	74	-20.88
2038	AV	H	0	29.36	20.2	49.56	54	-4.44
4076	PK	H	28.02	34.59	38.45	45.02	74	-28.98
4076	AV	H	28.02	34.59	26.29	32.86	54	-21.14
6114	PK	H	28.02	37.74	-	-	74	-
6114	AV	H	28.02	37.74	-	-	54	-
4824	PK	H	28.02	35.47	40.22	47.67	74	-26.33
4824	AV	H	28.02	35.47	28.1	35.55	54	-18.45
7236	PK	H	28.02	38.42	-	-	74	-
7236	AV	H	28.02	38.42	-	-	54	-
9648	PK	H	28.02	41.35	42.43	55.76	74	-18.24
9648	AV	H	28.02	41.35	30.38	43.71	54	-10.29
12060	PK	H	28.02	43.38	-	-	74	-
12060	AV	H	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2063	PK	V	0	29.36	22.24	51.6	74	-22.4
2063	AV	V	0	29.36	18.99	48.35	54	-5.65
4126	PK	V	28.02	34.59	39.68	46.25	74	-27.75
4126	AV	V	28.02	34.59	27.45	34.02	54	-19.98
6189	PK	V	28.02	37.74	-	-	74	-
6189	AV	V	28.02	37.74	-	-	54	-
4874	PK	V	28.02	35.47	38.9	46.35	74	-27.65
4874	AV	V	28.02	35.47	25.92	33.37	54	-20.63
7311	PK	V	28.02	38.42	42.01	52.41	74	-21.59
7311	AV	V	28.02	38.42	29.38	39.78	54	-14.22
9748	PK	V	28.02	41.35	41.18	54.51	74	-19.49
9748	AV	V	28.02	41.35	31.41	44.74	54	-9.26
12185	PK	V	28.02	43.38	-	-	74	-
12185	AV	V	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2063	PK	H	0	29.36	23.28	52.64	74	-21.36
2063	AV	H	0	29.36	20.06	49.42	54	-4.58
4126	PK	H	28.02	34.59	37	43.57	74	-30.43
4126	AV	H	28.02	34.59	26.45	33.02	54	-20.98
6189	PK	H	28.02	37.74	-	-	74	-
6189	AV	H	28.02	37.74	-	-	54	-
4874	PK	H	28.02	35.47	-	-	74	-
4874	AV	H	28.02	35.47	-	-	54	-
7311	PK	H	28.02	38.42	-	-	74	-
7311	AV	H	28.02	38.42	-	-	54	-
9748	PK	H	28.02	41.35	40.21	53.54	74	-20.46
9748	AV	H	28.02	41.35	29.55	42.88	54	-11.12
12185	PK	H	28.02	43.38	-	-	74	-
12185	AV	H	28.02	43.38	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2088	PK	V	0	29.36	22.6	51.96	74	-22.04
2088	AV	V	0	29.36	18.96	48.32	54	-5.68
4176	PK	V	28.02	34.59	37.11	43.68	74	-30.32
4176	AV	V	28.02	34.59	26.72	33.29	54	-20.71
6264	PK	V	28.02	37.74	-	-	74	-
6264	AV	V	28.02	37.74	-	-	54	-
4924	PK	V	28.02	35.47	38.01	45.46	74	-28.54
4924	AV	V	28.02	35.47	27.16	34.61	54	-19.39
7386	PK	V	28.02	38.42	38.34	48.74	74	-25.26
7386	AV	V	28.02	38.42	28.07	38.47	54	-15.53
9848	PK	V	28.02	41.55	40.76	54.29	74	-19.71
9848	AV	V	28.02	41.55	30.05	43.58	54	-10.42
12310	PK	V	28.02	43.75	-	-	74	-
12310	AV	V	28.02	43.75	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-” means the emission is below the noise floor.



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EUT : DWL-900
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
2088	PK	H	0	29.36	22.95	52.31	74	-21.69
2088	AV	H	0	29.36	18.96	48.32	54	-5.68
4176	PK	H	28.02	34.59	38.43	45	74	-29
4176	AV	H	28.02	34.59	27.1	33.67	54	-20.33
6264	PK	H	28.02	37.74	-	-	74	-
6264	AV	H	28.02	37.74	-	-	54	-
4924	PK	H	28.02	35.47	-	-	74	-
4924	AV	H	28.02	35.47	-	-	54	-
7386	PK	H	28.02	38.42	-	-	74	-
7386	AV	H	28.02	38.42	-	-	54	-
9848	PK	H	28.02	41.55	-	-	74	-
9848	AV	H	28.02	41.55	-	-	54	-

Remark:

1. Corrected Level = Reading Level + Correction Factor - Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.



5. Emission on the band edge §FCC 15.247(C)

In any 100kHz bandwidth outside the frequency band 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.

See band-edge plot as file name "Band-edge plot.pdf".