

# CE R&TTE TEST REPORT

according to

**EN 300 328-1 V1.3.1 (2001-12)**

**EN 300 328-2 V1.2.1 (2001-12)**

Applicant	TRENDware International, Inc.
Address	3135 Kashiwa Street, Torrance, CA90505 U.S.A.
Equipment	Cable/DSL 802.11g 54Mbps Wireless Router
Model No.	TEW-431BRP
Trade Name	TRENDware
Power Supply Type	AC Adaptor: Model: MW48-1201000U, I/P: 230Vac/50Hz; O/P: 12Vdc, 800mA

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of Exclusive Certification Corp, the test report shall not be reproduced except in full.
- This test report is only applicable to European Community.

## Contents

1.	List of Measurements.....	3
2.	Feature of Equipment under Test.....	3
2.1	History of this test report.....	3
3.	General Information of Test.....	3
4.	Transmitter Parameters .....	3
4.1	Effective Radiated Power (SUBCLAUSE 7.2.1).....	3
4.2	Transmitter Power Density – for DSSS and other types of modulation (SUBCLAUSE 7.2.2) .....	3
4.3	Transmitter Frequency Range – for DSSS and other equipment (SUBCLAUSE 7.2.3) .....	3
4.4	Transmitter Spurious Emissions (SUBCLAUSE 7.2.5).....	3
5.	Receiver Parameters (SUBCLAUSE 7.3.2).....	3
5.1	Receiver Spurious Emissions (Conducted).....	3
5.2	Receiver Spurious Emissions (Radiated, Eirp).....	3
6.	Test Equipment and Ancillaries Used for Tests .....	3
	Appendix A. Photographs of EUT.....	A1 ~ A4

## CERTIFICATE OF COMPLIANCE

according to

**EN 300 328-1 V1.3.1 (2001-12)**

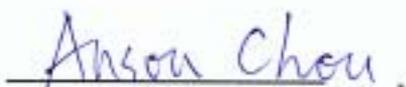
**EN 300 328-2 V1.2.1 (2001-12)**

Applicant	TRENDware International, Inc.
Address	3135 Kashiwa Street, Torrance, CA90505 U.S.A.
Equipment	Cable/DSL 802.11g 54Mbps Wireless Router
Model No.	TEW-431BRP

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 1999/5/EC**. The equipment was **passed** the test performed according to **EN 300 328-2 V1.2.1 (2001-12)**. Testing was carried out on Nov. 28, 2003 at Electronics Testing Center, Taiwan.

Signature



Anson Chou / Manager

## 1. List of Measurements

Clause	Test Parameter	Remark
	<b>Transmitter parameters</b>	
<u>5.2.1/7.2.1</u>	Effective Radiated Power	Passed
<u>5.2.2/7.2.2</u>	Peak Power Density – for FHSS equipment	Not Applicable
<u>5.2.2/7.2.2</u>	Peak Power Density – for DSSS equipment	Passed
<u>5.2.3/7.2.3</u>	Frequency Range – for FHSS equipment	Not Applicable
<u>5.2.3/7.2.4</u>	Frequency Range – for using other forms of modulation	Passed
<u>5.2.4/7.2.5</u>	Transmitter spurious emissions	Passed
	<b>Receiver parameters</b>	
<u>5.3.2/7.3.2</u>	Receiver spurious emissions	Passed

## 2. Feature of Equipment under Test

The Wireless Router incorporates many advanced features, carefully designed to provide sophisticated functions while being easy to use.

### 2.1 History of this test report

The Model No. TEW-431BRP (Report No: CR03111004-A) is the same and it only differs from the outside cosmetic. The functions and specifications are the same.

### 3. General Information of Test

Test Site	:	ELECTRONICS TESTING CENTER, Taiwan No. 34, Lin 5, Ding Fu Tdun, Linkou Hsiang, Taipei, Taiwan, R.O.C.
Test Voltage	:	230V/ 50Hz
Test Condition	:	Normal Voltage : 230V Extreme Voltage : 253V and 207V subclause 6.4.2.3 Normal Temperature : 25 Extreme Temperature : 0 and 40 subclause 6.4.1
Test in Compliance with	:	ETSI EN 300 328-1 V1.3.1 (2001-12) ETSI EN 300 328-2 V1.2.1 (2001-12)



### 4. Transmitter Parameters

#### 4.1 Effective Radiated Power (SUBCLAUSE 7.2.1)

Ambient temperature: 28°C ( See clause 7.2.1 step 1 )  
 Relative humidity: 65%  
 EFFECTIVE Radiated power (Conducted) Gain: 1.8dBi  
 Rated output power (maximum)....15dBm  
 Antenna: Integral Antenna  
 Bandwidth of measurement receiver. .RBW 1 MHz  
 Bit-Rate: 11Mbps 802.11b

Test conditions		Transmitter power (dBm)					
		2412MHz		242MHz		2472MHz	
		Peak	Ave.	Peak	Ave.	Peak	Ave.
T <sub>nom</sub> (25)°C	V <sub>nom</sub> (230 Vac)	13.3	11.4	15.4	13.7	16.4	14.6
T <sub>min</sub> (0)°C	V <sub>nom</sub> (207 Vac)	12.5	10.6	14.8	13.0	16.4	14.4
	V <sub>nom</sub> (253 Vac)	13.1	11.1	15.1	13.0	16.3	14.3
T <sub>max</sub> (40)°C	V <sub>nom</sub> (207 Vac)	13.0	11.0	15.2	13.2	16.4	14.4
	V <sub>nom</sub> (253 Vac)	12.9	10.9	14.8	13.3	16.5	14.5
Maximum deviation from rated output under normal test conditions (dB)		-1.7		-0.4		-.05	
Measurement uncertainty (dB)		±1.5					

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 14, 15, 16, 17

.....  
 ..



Ambient temperature: 28°C

( See clause 7.2.1 step 1 )

Relative humidity: 65%

EFFECTIVE Radiated power (Conducted)

Gain: 1.8dBi

Rated output power (maximum)....15dBm

Antenna: Integral Antenna

Bandwidth of measurement receiver. .RBW 1 MHz

Bit-Rate: 54Mbps

802.11g

Test conditions		Transmitter power (dBm)					
		2412MHz		242MHz		2472MHz	
		Peak	Ave.	Peak	Ave.	Peak	Ave.
T <sub>nom</sub> (25)°C	V <sub>nom</sub> (230 Vac)	6.1	6.2	8.3	8.4	9.1	9.2
T <sub>min</sub> (0)°C	V <sub>nom</sub> (207 Vac)	8.4	5.8	8.6	7.6	9.6	8.6
	V <sub>nom</sub> (253 Vac)	8.3	6.1	8.2	8.2	9.5	8.9
T <sub>max</sub> (40)°C	V <sub>nom</sub> (207 Vac)	8.2	6.0	8.4	8.1	9.7	9.1
	V <sub>nom</sub> (253 Vac)	8.1	5.9	8.2	8.3	9.3	9.1
Maximum deviation from rated output under normal test conditions (dB)		-6.6		-6.4		-5.3	
Measurement uncertainty (dB)		±1.5					

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7 , 14 , 15 , 16 , 17

.....  
..



Ambient temperature: 28°C

( See clause 7.2.1 step 1 )

Relative humidity: 65%

EFFECTIVE Radiated power (Radiated)

Gain: 1.8dBi

Rated output power (maximum)....15dBm

Antenna (where applicable): Antenna 1

Bandwidth of measurement receiver. .RBW 1 MHz

Bit-Rate: 11Mbps

802.11b

Test conditions		Transmitter power (dBm)		
		2412MHz	242MHz	2472MHz
T <sub>min</sub> (25)°C	V <sub>nom</sub> (230 Vac)	9.1	9.8	11.4
	V <sub>nom</sub> (207 Vac)	9.0	9.6	9.6
	V <sub>nom</sub> (253 Vac)	9.1	9.7	10.2
Maximum deviation from rated output under normal test conditions (dB)		-5.9	-5.2	-3.6
Measurement uncertainty (dB)		±2.0		

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4 , 9 , 12 , 16 , 17

.....  
..



Ambient temperature: 28°C

( See clause 7.2.1 step 1 )

Relative humidity: 65%

EFFECTIVE Radiated power (Radiated)

Gain: 1.8dBi

Rated output power (maximum)....15dBm

Antenna (where applicable): Antenna 1

Bandwidth of measurement receiver. .RBW 1 MHz

Bit-Rate: 54Mbps

802.11g

Test conditions		Transmitter power (dBm)		
		2412MHz	242MHz	2472MHz
T <sub>min</sub> (25)°C	V <sub>nom</sub> (230 Vac)	4.6	6.4	8.1
	V <sub>nom</sub> (207 Vac)	4.5	6.3	7.6
	V <sub>nom</sub> (253 Vac)	4.3	6.0	7.2
Maximum deviation from rated output under normal test conditions (dB)		-10.4	-8.6	-6.9
Measurement uncertainty (dB)		±2.0		

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4 , 9 , 12 , 16 , 17

.....  
..



Ambient temperature: 28°C

( See clause 7.2.1 step 1 )

Relative humidity: 65%

EFFECTIVE Radiated power (Radiated)

Gain: 1.8dBi

Rated output power (maximum)....15dBm

Antenna (where applicable): Antenna 2

Bandwidth of measurement receiver. .RBW 1 MHz

Bit-Rate: 11Mbps

802.11b

Test conditions		Transmitter power (dBm)		
		2412MHz	242MHz	2472MHz
T <sub>min</sub> (25)°C	V <sub>nom</sub> (230 Vac)	9.3	11.0	12.6
	V <sub>nom</sub> (207 Vac)	10.3	10.9	10.8
	V <sub>nom</sub> (253 Vac)	10.4	10.9	11.5
Maximum deviation from rated output under normal test conditions (dB)		-4.6	-4.0	-2.4
Measurement uncertainty (dB)		±2.0		

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4 , 9 , 12 , 16 , 17

.....  
..



Ambient temperature: 28°C

( See clause 7.2.1 step 1 )

Relative humidity: 65%

EFFECTIVE Radiated power (Radiated)

Gain: 1.8dBi

Rated output power (maximum)....15dBm

Antenna (where applicable): Antenna 2

Bandwidth of measurement receiver. .RBW 1 MHz

Bit-Rate: 54Mbps

802.11g

Test conditions		Transmitter power (dBm)		
		2412MHz	242MHz	2472MHz
T <sub>min</sub> (25)°C	V <sub>nom</sub> (230 Vac)	5.8	7.6	9.3
	V <sub>nom</sub> (207 Vac)	5.6	7.4	8.8
	V <sub>nom</sub> (253 Vac)	5.5	7.1	7.4
Maximum deviation from rated output under normal test conditions (dB)		-9.2	-7.4	-5.7
Measurement uncertainty (dB)		±2.0		

LIMIT SUBCLAUSE 5.2.1

Under all test conditions	20 dBm / -10dBW
---------------------------	-----------------

A separate page shall be filled in for each antenna assembly submitted for type testing.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4 , 9 , 12 , 16 , 17

.....  
..



**4.2 Transmitter Power Density – for DSSS and other types of modulation  
(SUBCLAUSE 7.2.2)**

Ambient temperature: 28°C

( clause 7.2.2 )

Relative humidity: 65%

TRANSMITTER POWER DENSITY - DSSS modulation

Rated radiated power 15 dBm/MHz.

Bit-Rate: 11Mbps

802.11b

Tests	Measured Power Density		
	lowest frequency 2412MHz	middle frequency 2442MHz	highest frequency 2472MHz
Measured power density	5.0 dBm/MHz	7.2 dBm/MHz	8.0 dBm/MHz
Measurement uncertainty	±3.0		

LIMITS: Clause 5.2.3

Under normal test conditions only	-10dBW/100KHz 20dBm/100KHz
-----------------------------------	----------------------------

Is Tx on Time < 10 microseconds ? .....

If yes, then the test method used is that agreed between the National Regulatory Authority, the appointed test house, the accreditation authority and the applicant;

the test method reference is as follows:

.....

and the basic description of the method of measurement is as follows:

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 14, 15, 16, 17

.....



Ambient temperature: 28°C

( clause 7.2.2 )

Relative humidity: 65%

TRANSMITTER POWER DENSITY - DSSS modulation

Rated radiated power 15 dBm/MHz.

Bit-Rate: 54Mbps

802.11g

Tests	Measured Power Density		
	lowest frequency 2412MHz	middle frequency 2442MHz	highest frequency 2472MHz
Measured power density	-2.2 dBm/MHz	-0.3 dBm/MHz	0.3 dBm/MHz
Measurement uncertainty	±3.0		

LIMITS: Clause 5.2.3

Under normal test conditions only	-10dBW/100KHz 20dBm/100KHz
-----------------------------------	----------------------------

Is Tx on Time < 10 microseconds ? .....

If yes, then the test method used is that agreed between the National Regulatory Authority, the appointed test house, the accreditation authority and the applicant;

the test method reference is as follows:

.....

and the basic description of the method of measurement is as follows:

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7 , 14 , 15 , 16 , 17

.....



**4.3 Transmitter Frequency Range – for DSSS and other equipment  
(SUBCLAUSE 7.2.3)**

Ambient temperature: 28°C ( clause 7.2.3 )

Relative humidity: 65%

OPERATING FREQUENCY RANGE –DSSS equipment

Applicants declared operating frequency band:

Lowest frequency: 2.400 GHz Highest frequency: 2.4835 GHz Modulated

Bit-Rate: 11Mbps

802.11b

Tests conditions		Frequency MHz	
		FL	FH
T <sub>nom</sub> (25)°C	V <sub>nom</sub> (230 Vac)	2403.589	2481.086
T <sub>nom</sub> (0)°C	V <sub>nom</sub> (207Vac)	2403.475	2481.159
	V <sub>nom</sub> (253 Vac)	2403.256	2481.266
T <sub>nom</sub> (40)°C	V <sub>nom</sub> (207 Vac)	2403.588	2481.348
	V <sub>nom</sub> (253 Vac)	2403.601	2481.380
Measurement uncertainty Hz		±1500	

Where FL Lowest frequency at the appropriate spurious emission level

FH Highest frequency at the appropriate spurious emission level

Band edge limits FL = 2403.33MHz (measured) and FH = 2481.17MHz MHz (measured)

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7 , 14 , 15 , 16 , 17

.....



Ambient temperature: 28°C

( clause 7.2.3 )

Relative humidity: 65%

OPERATING FREQUENCY RANGE –DSSS equipment

Applicants declared operating frequency band:

Lowest frequency: 2.400 GHz Highest frequency: 2.4835 GHz Modulated

Bit-Rate: 54Mbps

802.11g

Tests conditions		Frequency MHz	
		FL	FH
T <sub>nom</sub> (25)°C	V <sub>nom</sub> (230 Vac)	2403.333	2481.175
T <sub>nom</sub> (0)°C	V <sub>nom</sub> (207Vac)	2403.128	2481.365
	V <sub>nom</sub> (253 Vac)	2403.254	2481.168
T <sub>nom</sub> (40)°C	V <sub>nom</sub> (207 Vac)	2403.792	2481.309
	V <sub>nom</sub> (253 Vac)	2403.366	2481.512
Measurement uncertainty Hz		±1500	

Where FL Lowest frequency at the appropriate spurious emission level

FH Highest frequency at the appropriate spurious emission level

Band edge limits FL = 2403.33MHz (measured) and FH = 2481.17MHz MHz (measured)

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 14, 15, 16, 17

.....



**4.4 Transmitter Spurious Emissions (SUBCLAUSE 7.2.5)**

Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Operating @2412 MHz

with maximum output power

Frequency static

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
19296.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9 , 13 , 15 , 16 , 17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Operating @2472 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4946.000	1	---
7420.750	1	---
9895.500	1	---
12370.250	1	---
14845.000	1	---
17319.750	1	---
19794.500	1	---
22269.250	1	---
24744.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9,13,15,16,17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Operating @2412 MHz with maximum output power

Frequency static

Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7415.330	1	---
9886.600	1	---
12357.990	1	---
17300.650	1	---
19771.980	1	---
22243.310	1	---
24714.640	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9, 13, 15, 16, 17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Operating @2472 MHz with maximum output power

Frequency static

Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7416.000	1	---
9888.000	1	---
12360.000	1	---
14832.000	1	---
17304.000	1	---
19776.000	1	---
22248.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9, 13, 15, 16, 17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Standby @2412 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9, 13, 15, 16, 17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Standby @2472 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7416.000	1	---
9888.000	1	---
12360.000	1	---
14832.000	1	---
17304.000	1	---
19776.000	1	---
24720.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9,13,15,16,17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Standby @2412 MHz with maximum output power

Frequency static

Bit-Rate: 54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9 , 13 , 15 , 16 , 17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

Rated output power .....15dBm

Transmitter Standby @2472 MHz with maximum output power

Frequency static

Bit-Rate:54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7416.000	1	---
9888.000	1	---
12360.000	1	---
14832.000	1	---
17304.000	1	---
19776.000	1	---
22248.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

9,13,15,16,17

.....



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Operating @2412 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7234.250	1	---
9644.500	1	---
12054.750	1	---
16875.250	1	---
19285.250	1	---
21695.750	1	---
24106.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Operating @2472 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4946.000	1	---
7420.750	1	---
9895.500	1	---
12370.250	1	---
14845.000	1	---
17319.750	1	---
22269.250	1	---
24719.850	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

**TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)**

Rated output power .....15dBm

Transmitter Operating @2412 MHz with maximum output power

Frequency static

Bit-Rate:54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
19296.000	1	---
21708.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

**LIMIT SUBCLAUSE 7.3.7**

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)**

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..

Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Operating @2472 MHz with maximum output power

Frequency static

Bit-Rate:54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7415.330	1	---
9886.660	1	---
12357.990	1	---
14829.320	1	---
17300.650	1	---
19771.980	1	---
22243.310	1	---
24714.640	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....

..



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Standby @2412 MHz with maximum output power

Frequency static

Bit-Rate: 11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7234.250	1	---
9644.500	1	---
12054.750	1	---
14465.000	1	---
16875.250	1	---
19285.500	1	---
24106.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Standby @2472 MHz with maximum output power

Frequency static

Bit-Rate:11Mbps 802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4943.970	1	---
7415.955	1	---
9887.940	1	---
12359.925	1	---
14831.910	1	---
17303.895	1	---
22247.865	1	---
19775.880	1	---
24719.850	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Standby @2412 MHz with maximum output power

Frequency static

Bit-Rate: 54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4823.974	1	---
7235.961	1	---
9647.948	1	---
12059.935	1	---
14471.932	1	---
16883.909	1	---
19295.896	1	---
21707.883	1	---
24119.870	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

TRANSMITTER SPURIOUS EMISSIONS (RADIATED, EIRP)

Rated output power .....15dBm

Transmitter Standby @2472 MHz with maximum output power

Frequency static

Bit-Rate: 54Mbps 802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4943.970	1	---
7415.955	1	---
9887.940	1	---
12359.925	1	---
14831.910	1	---
17303.895	1	---
19775.880	1	---
22247.865	1	---
24719.850	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 7.3.7

State	47-74 MHz 87.5-118 MHz 174-230 MHz 470-862 MHz	Other frequencies ≥ 25 to ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW / -54dBm	250 nW / -36dBm	1 μW / -30dBm
Standby	2 nW / -57dBm	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 16, 17

.....  
..



## 5. Receiver Parameters (SUBCLAUSE 7.3.2)

### 5.1 Receiver Spurious Emissions (Conducted)

Ambient temperature: 28°C

Relative humidity: 65%

Frequency static @2412 MHz

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	-39.73
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
19296.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty $\pm 2$ (dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

#### LIMIT SUBCLAUSE 8.1.5

Frequency	$\geq 25$ to $\leq 1000$ MHz	$> 1000$ MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

Frequency static @2472 MHz

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4946.000	1	-39.9
7420.750	1	---
9895.500	1	---
12370.250	1	---
14845.000	1	---
17319.750	1	---
19794.500	1	---
22269.250	1	---
24744.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..



Ambient temperature: 28°C  
 Relative humidity: 65%  
 Frequency static @2412 MHz  
 Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	-38.43
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
19296.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
 ..



Ambient temperature: 28°C

Relative humidity: 65%

Frequency static @2472 MHz

Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	-42.2
7415.330	1	---
9886.660	1	---
12357.990	1	---
14829.320	1	---
17300.650	1	---
19771.980	1	---
22243.310	1	---
24714.640	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..



**5.2 Receiver Spurious Emissions (Radiated, Eirp)**

Ambient temperature: 28°C

Relative humidity: 65%

Frequency static Operation @2412 MHz

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7234.250	1	---
9644.550	1	---
12054.750	1	---
14465.000	1	---
16875.250	1	---
19285.500	1	---
21695.750	1	---
24106.000	1	---
Measurement uncertainty ±2(dB)		

Remark” ---“ means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..



Ambient temperature: 28°C

Relative humidity: 65%

Frequency static Operation @2472 MHz

Bit-Rate: 11Mbps

802.11b

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4946.000	1	---
7420.750	1	---
9895.500	1	---
1237.250	1	---
14845.000	1	---
17319.750	1	---
19794.250	1	---
22269.250	1	---
24744.000	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..



Ambient temperature: 28°C  
 Relative humidity: 65%  
 Frequency static Operation @2412 MHz  
 Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4824.000	1	---
7236.000	1	---
9648.000	1	---
12060.000	1	---
14472.000	1	---
16884.000	1	---
19296.000	1	---
21708.000	1	---
24120.000	1	---
Measurement uncertainty $\pm 2$ (dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	$\geq 25$ to $\leq 1000$ MHz	$> 1000$ MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
 ..



Ambient temperature: 28°C

Relative humidity: 65%

Frequency static Operation @ 2472 MHz

Bit-Rate: 54Mbps

802.11g

Frequency (MHz)	Measuring receiver bandwidth (MHz)	Spurious emissions level (dBm)
4944.000	1	---
7415.330	1	---
9886.660	1	---
12357.990	1	---
14829.320	1	---
17300.650	1	---
19771.980	1	---
22243.310	1	---
24714.640	1	---
Measurement uncertainty ±2(dB)		

Remark" ---" means the emission level is greater than 20 dB below the limit or can not be detected.

LIMIT SUBCLAUSE 8.1.5

Frequency	≥ 25 to ≤ 1000 MHz	> 1000 MHz
Limits	2 nW / -57dBm	20 nW / -47dBm

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

7, 9, 10, 11, 16, 17

.....  
..

## 6. Test Equipment and Ancillaries Used for Tests

Ref. No.	Instrument/Ancillary	Type	Manufacturer	Serial No.
01	Bi-conical Antenna	3110B	EMCO	2486
02	Log-periodic Antenna	3146	EMCO	4942
03	DipoleAntenna	3121	EMCO	1315
04	Hom Antenna	3115	EMCO	9804-5454
05	Hom Antenna	3116	EMCO	9611-2328
06	Test Receiver	ESVS 30	R&S	8473710/008
07	Test Receiver	ESBI	R&S	848224/003
08	Spectrum Analyzer	8568B	HP	2732A03842
09	Spectrum Analyzer	8564E	HP	3821A01267
10	Pre-amplifier	8447D	HP	2648A0494
11	Pre-amplifier	8449B	HP	3008A00936
12	Spectrum Analyzer	83732B	HP	US37100841
13	Hi-pass Filter	84300-80038	HP	005
14	Attenuator	1	Weinschel	AS8828
15	Temperature Chamber	EOS200T	ACS	5460
16	Frequency Converter	BFA-200-70D	Board-Tech	200005
17	Voltage Meter	YF-3180	YFE	931218
18	DC Power Supply	GPQ-3030	Good Will	9070171
19	Radio Communications Test Set	2955B	Marconi	295501/037
20	Multifunction Supply	8904A	HP	2917A02406
21	Signal Synthesizer	8656B	HP	2926U07030
22	Preamplifier	83051A	HP	3332A00627

Calibration Interval of instruments listed above is one year.