



**TEST REPORT OF A 2.4 GHZ LOW POWER WLAN
INTEGRATED CARD, BRAND AGERE,
TYPE PC24-11-FC/R, IN CONFORMITY WITH
47 CFR PART 15 (2001-12-18), SECTION 15.247 (e)(2).**

FCC listed : 90828
Industry Canada : IC3501

TNO Electronic Products & Services (EPS) B.V.
P.O. Box 15
9822 ZG Niekerk (NL)
Smidshornerweg 18
9822 TL Niekerk (NL)

Telephone: +31 594 505005
Telefax: +31 594 504804

E-mail: info@eps.tno.nl



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

MEASUREMENT/TECHNICAL REPORT

Agere Systems Nederland B.V.

Model : PC24-11-FC/R

FCC ID: IMRWLPC2411R

April 29, 2002

This report concerns:	Original grant/certification	Class 2 change	Verification
Equipment type:	Direct Sequence Spread Spectrum Transceiver		
Deferred grant requested per 47 CFR 0.457(d)(1)(ii) ?	Yes	No	
Report prepared by:	Name	: P.A.J.M. Robben, B.Sc.E.E.	
	Company name	: TNO Electronic Products & Services (EPS) B.V.	
	Address	: Smidshornerweg 18	
	Postal code/city	: 9822 ZG Niekerk	
	Mailing address	: P.O. Box 15	
	Postal code/city	: 9822 TL Niekerk	
	Country	: The Netherlands	
	Telephone number	: + 31 594 505 005	
	Telefax number	: + 31 594 504 804	
	E-mail	: info@eps.tno.nl	

The data taken for this test and report herein was done in accordance with 47 CFR Part 15 (2001-12-18), section 15.247 (e)(2). TNO Electronic Products & Services (EPS) B.V. at Niekerk, The Netherlands, certifies that the data is accurate on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: April 29, 2002

Signature:

P. de Beer
TNO Electronic Products & Services (EPS) B.V.



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Description of test item

Test item : 2.4 GHz low power WLAN integrated PCMCIA card
Manufacturer : Agere Systems Nederland B.V.
Brand : Agere
Type : PC24-11-FC/R
Serial number : 02UT03640001
Revision : n.a.
Receipt number : 2
Receipt date : March 25, 2002

Applicant information

Applicant's representative : Mr. M. Koop
Company : Agere Systems Nederland B.V.
Address : Zadelstede 1-10
Postal code : 3431 JZ
City : Nieuwegein
PO-box : 755
Postal code : 3430 AP
City : Nieuwegein
Country : The Netherlands
Telephone number : +31 30 607 6520
Telefax number : +31 30 609 7556

Test(s) performed

Location : Niekerk
Test(s) started : March 25, 2002
Test(s) completed : April 29, 2002
Purpose of test(s) : Type approval / certification
Test specification(s) : 47 CFR Part 15 (2001-12-18)

Test engineer : O.H. Hoekstra

Report written by : P.A.J.M. Robben, B.Sc.E.E.

Project leader : P.A.J.M. Robben, B.Sc.E.E.

This report is in conformity with NEN-EN-ISO/IEC 17025: 2000.

This report shall not be reproduced, except in full, without the written permission of TNO Electronic Products & Services (EPS) B.V.
The test results relate only to the item(s) tested.



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Table of contents

1	General information.....	5
1.1	Product description.....	5
1.2	Related submittal(s) and/or Grant(s).....	5
1.3	Tested system details.....	5
1.4	Test methodology.....	6
1.5	Test facility.....	6
1.6	Product labeling.....	6
1.7	System test configuration.....	7
1.7.1	Justification.....	7
1.7.2	EUT exercise software.....	7
1.8	Special accessories.....	7
1.9	Equipment modifications.....	7
1.10	Configuration of the tested system.....	7
1.11	Block diagram(s) of the EUT.....	7
2	Theoretical processing gain calculation.....	8
3	Test results of measurements in conformity with 47 CFR Part 15.247 (e)(2).....	9
3.1	Test results at a transmission bit-rate of 2 Mbps.....	9
3.2	Test results at a transmission bit-rate of 11 Mbps.....	16
4	List of utilized test equipment.....	23



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

1 General information.

1.1 Product description.

The 2.4 GHz low power WLAN integrated PCMCIA card, brand Agere, type PC24-11-FC/R, is designed to operate in the 2.4 GHz ISM frequency band, channels 1 to 11 (2412 MHz to 2462 MHz), as specified by the Federal Communications Commission in the USA.

The 2.4 GHz low power WLAN integrated PCMCIA card, brand Agere, type PC24-11-FC/R, utilizes Direct Sequence Spread Spectrum (DSSS) technology.

The 2.4 GHz low power WLAN integrated PCMCIA card, brand Agere, type PC24-11-FC/R, is intended for use with external antennas which are to be connected to the (unique) antenna connector(s). Only antennas, which have been certified by the Federal Communications Commission for use with this specific 2.4 GHz low power WLAN integrated PCMCIA card, may be connected to the antenna connector(s) of this device.

1.2 Related submittal(s) and/or Grant(s).

Not applicable.

1.3 Tested system details.

Details and an overview of the system and all its components, as it has been tested, can be found in table 1 below. FCC ID's are stated in this overview where applicable. The EUT is listed in the first row of this table 1.

Description	Type number	Serial number	FCC ID	Cable descriptions
2.4 GHz low power WLAN integrated PCMCIA card	PC24-11-FC/R	02UT03640001	IMRWLPC2411R	Connected to coaxial cable.
Notebook computer, manufacturer Dell Computer Corporation	Latitude C600	DS/N TW-0791UH-12800-0BR-0635 DP/N 0791UH C/O TW Rev A05	n.a. (DoC)	Unshielded DC power cord to AC/DC adapter. Shielded parallel cable to printer.
Dell AC/DC power adapter 100-240 VAC/1.5 Amps to +20 VDC/3.5 Amps	AA20031, PA-6 family	DS/N CN-09364U-12761-0C4-007R DP/N 09361U/C/O CN/Rev A00	n.a. (DoC)	Unshielded DC power cord to notebook computer. Unshielded power cord to AC mains.
Dell notebook computer	Latitude C800	2QYPD01	n.a. (DoC)	Unshielded DC power cord to AC/DC adapter.
Dell AC/DC power adapter 100-240 VAC/1.5 Amps to +20 VDC/3.5 Amps	AA20031, PA-6 family	CN-09364U-12761-0C4-003K	n.a. (DoC)	Unshielded DC power cord to notebook computer. Unshielded power cord to AC mains.
Lucent Technologies 2.4 GHz low power WLAN PCMCIA card	PC24E-H-FC	01UT18361879	IMRWLPCE24H	Coaxial cable from antenna connector to test setup.

Table 1 - Tested system details overview.



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

1.4 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (2001-12-18), section 15.247 (e)(2).

The processing gain is measured using the CW jamming margin method. A signal generator is stepped in 50 kHz increments across the pass-band of the system. The pass-band of the receiver is defined as being 14 MHz.

At each point the generator level required to produce a Bit Error Rate equivalent to $BER=1.0 \times 10E-5$ is recorded as the Jammer level (J). The output power of the transmitter is measured at the same point and recorded as Signal (S). The Jammer to Signal ratio (J/S) is then calculated with 20% of the worst measurement results discarded. The lowest remaining J/S ratio is used to calculate the processing gain using formula:

$$G_p = (S/N)_o + M_j + L_{sys}$$

where the $(S/N)_o$ value is declared by the manufacturer and L_{sys} is defined as having a maximum value of 2.0 dB.

1.5 Test facility.

The Federal Communications Commission has reviewed the technical characteristics of the test facilities at TNO Electronic Products & Services (EPS) B.V., located in Niekerk, 9822 TL Smidshornerweg 18, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948, per October 23, 2000.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The list of all public test facilities is available on the Internet at <http://www.fcc.gov>.

1.6 Product labeling.

In accordance with 47 CFR Part 15.19 (a)(3) the following text shall be placed on a label, which is attached to the EUT:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In accordance with 47 CFR Part 2.925 (a)(1), the FCC ID shall be placed on a label, which is attached to the EUT.

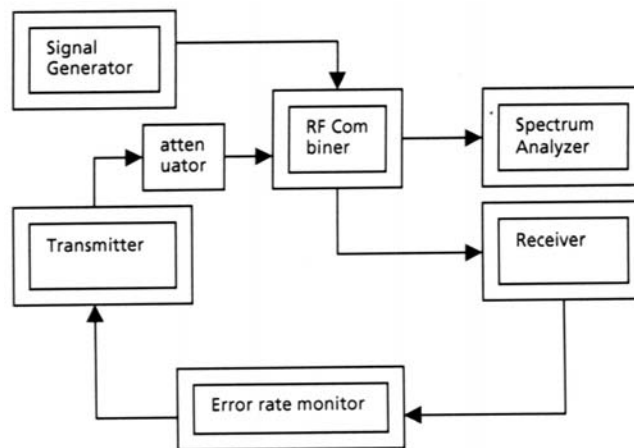
For further details about the labeling requirements (size, legibility, etc.) as set by the Federal Communications Commission see 47 CFR Part 15.19 (a)(3), 47 CFR Part 15.19 (b)(2), 47 CFR Part 15.19 (b)(4), 47 CFR Part 2.925 and 47 CFR Part 2.926.



1.7 System test configuration.

1.7.1 Justification.

Tests were performed at the operating frequency in the middle of the specified frequency band (channel 7: 2442 MHz).



The EUT was tested while inside of the PCMCIA slot of a notebook computer and while connected to the RF combiner by means of a coaxial cable. A second notebook computer, fitted with a 2.4 GHz low power WLAN PCMCIA card, was used to transmit continuously. The 2.4 GHz low power PCMCIA card was connected to the attenuator/RF combiner by means of a coaxial cable. The signal generator was used to generate the jamming signal, while the spectrum was monitored by means of a spectrum analyzer.

1.7.2 EUT exercise software.

The EUT could be enabled to transmit or receive continuously on channel 7 (2442 MHz) by means of test software, which was supplied by the manufacturer of the EUT. The utilized test software also enables various transmission bit-rate settings in the range of 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s and 11 Mbit/s. Furthermore, the test software has also a built-in frame/bit-error-rate monitor, allowing the test engineer to monitor the bit-error-rate during all tests.

1.8 Special accessories.

No special accessories are used and/or needed to achieve compliance with the appropriate sections of 47 CFR Part 15.

1.9 Equipment modifications.

No modifications have been made to the equipment in order to achieve compliance with the appropriate sections of 47 CFR Part 15.

1.10 Configuration of the tested system.

Not applicable. See table 1 in section 1.3 of this test report.

1.11 Block diagram(s) of the EUT.

The block diagram is available as part of the documentation which is to be submitted to the FCC/TCB.



2 Theoretical processing gain calculation.

Data-rate (Mbps)	Modulation type	Symbol-rate (Msps)	Chip-rate (Mcps)	Chip/symbol ratio	Theoretical PG	(S/N) _o (dB)	L _{sys} (dB)	Calculated J/S (dB)	Allowed J/S (dB)
2	DQPSK	1	11	11:1	10.4	13.3	2.0	-4.9	-5.3
11	CCK	1.375	8	8:1	9.0	17.0	2.0	-10.0	-9.0

Table 2

Explanation of theoretical processing gain calculations.

BER = 1.E-5, Data-rate = 2 Mbps

Chip-rate = 11 Mcips/s, Symbol-rate = 1 Msymbols/s, Bit-rate = 2 Mbits/s

Ratio chip/symbol = 11:1

Theoretical processing gain: $G_p = 10\log(11) = 10.4$ dB

$E_b/N_0 = 10.3$ dB

$(S/N)_o = E_s/N_0 = E_b/N_0 + \text{correction factor for 2 bits/symbol} = 10.3 \text{ dB} + 10\log(2) \text{ dB} = 10.3 \text{ dB} + 3.0 \text{ dB} = 13.3 \text{ dB}$

$L_{\text{sys}} = 2.0$ dB max.

$G_p = (S/N)_o + M_j + L_{\text{sys}}$

Calculated $M_j = J/S = G_p - (S/N)_o - L_{\text{sys}} = 10.4 \text{ dB} - 13.3 \text{ dB} - 2.0 \text{ dB} = -4.9 \text{ dB}$

Allowed J/S for 10 dB PG = $G_p - (S/N)_o - L_{\text{sys}} = 10.0 \text{ dB} - (S/N)_o - L_{\text{sys}} = 10.0 \text{ dB} - 13.3 \text{ dB} - 2.0 \text{ dB} = -5.3 \text{ dB}$

BER = 1.E-5, Data-rate = 11 Mbps

Chip-rate = 11 Mcips/s, Symbol-rate = 1.375 Msymbols/s, Bit-rate = 11 Mbits/s

Ratio chip/symbol = 8:1

Theoretical processing gain: $G_p = 10\log(8) = 9.0$ dB

$E_b/N_0 = 8.0$ dB

$(S/N)_o = E_s/N_0 = E_b/N_0 + \text{correction factor for 8 bits/symbol} = 8.0 \text{ dB} + 10\log(8) \text{ dB} = 8.0 \text{ dB} + 9.0 \text{ dB} = 17.0 \text{ dB}$

$L_{\text{sys}} = 2.0$ dB max.

$G_p = (S/N)_o + M_j + L_{\text{sys}}$

Calculated $M_j = J/S = G_p - (S/N)_o - L_{\text{sys}} = 9.0 \text{ dB} - 17.0 \text{ dB} - 2.0 \text{ dB} = -10.0 \text{ dB}$

Allowed J/S for 10 dB PG = $G_p - (S/N)_o - L_{\text{sys}} = 10.0 \text{ dB} - (S/N)_o - L_{\text{sys}} = 10.0 \text{ dB} - 17.0 \text{ dB} - 2.0 \text{ dB} = -9.0 \text{ dB}$



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
 Description of EUT: 2.4 GHz low power WLAN integrated card
 Manufacturer: Agere Systems Nederland B.V.
 Brand mark: Agere
 Type: PC24-11-FC/R
 FCC ID: IMRWLPC2411R

3 Test results of measurements in conformity with 47 CFR Part 15.247 (e)(2).

3.1 Test results at a transmission bit-rate of 2 Mbps.

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (e)(2), are depicted in table 3.

Pass band : $f_0 \pm 7$ MHz
 Channel : 2442.0 MHz (channel 7)
 Transmission bit-rate : 2 Mbps

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
1	2449.00	2	-51.70	-52.00	0.30
2	2448.95	2	-51.50	-52.00	0.50
3	2448.90	2	-51.40	-52.00	0.60
4	2448.85	2	-51.30	-52.00	0.70
5	2448.80	2	-51.10	-52.00	0.90
6	2448.75	2	-50.90	-52.00	1.10
7	2448.70	2	-50.80	-52.00	1.20
8	2448.65	2	-50.60	-52.00	1.40
9	2448.60	2	-50.40	-52.00	1.60
10	2448.55	2	-52.00	-52.00	0.00
11	2448.50	2	-51.10	-52.00	0.90
12	2448.45	2	-51.60	-52.00	0.40
13	2448.40	2	-51.60	-52.00	0.40
14	2448.35	2	-51.90	-52.00	0.10
15	2448.30	2	-51.00	-52.00	1.00
16	2448.25	2	-51.10	-52.00	0.90
17	2448.20	2	-51.50	-52.00	0.50
18	2448.15	2	-51.40	-52.00	0.60
19	2448.10	2	-51.40	-52.00	0.60
20	2448.05	2	-51.60	-52.00	0.40
21	2448.00	2	-51.20	-52.00	0.80
22	2447.95	2	-51.50	-52.00	0.50
23	2447.90	2	-51.40	-52.00	0.60
24	2447.85	2	-51.10	-52.00	0.90
25	2447.80	2	-51.30	-52.00	0.70
26	2447.75	2	-51.00	-52.00	1.00
27	2447.70	2	-51.00	-52.00	1.00
28	2447.65	2	-50.90	-52.00	1.10
29	2447.60	2	-51.00	-52.00	1.00
30	2447.55	2	-51.40	-52.00	0.60
31	2447.50	2	-51.40	-52.00	0.60
32	2447.45	2	-52.00	-52.00	0.00
33	2447.40	2	-52.10	-52.00	-0.10
34	2447.35	2	-52.40	-52.00	-0.40
35	2447.30	2	-51.80	-52.00	0.20
36	2447.25	2	-53.00	-52.00	-1.00
37	2447.20	2	-52.80	-52.00	-0.80



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
38	2447.15	2	-52.80	-52.00	-0.80
39	2447.10	2	-52.70	-52.00	-0.70
40	2447.05	2	-51.90	-52.00	0.10
41	2447.00	2	-51.20	-52.00	0.80
42	2446.95	2	-50.90	-52.00	1.10
43	2446.90	2	-50.80	-52.00	1.20
44	2446.85	2	-50.70	-52.00	1.30
45	2446.80	2	-50.80	-52.00	1.20
46	2446.75	2	-51.50	-52.00	0.50
47	2446.70	2	-51.20	-52.00	0.80
48	2446.65	2	-51.50	-52.00	0.50
49	2446.60	2	-51.80	-52.00	0.20
50	2446.55	2	-51.80	-52.00	0.20
51	2446.50	2	-52.00	-52.00	0.00
52	2446.45	2	-51.00	-52.00	1.00
53	2446.40	2	-50.90	-52.00	1.10
54	2446.35	2	-50.80	-52.00	1.20
55	2446.30	2	-51.30	-52.00	0.70
56	2446.25	2	-51.60	-52.00	0.40
57	2446.20	2	-51.70	-52.00	0.30
58	2446.15	2	-52.20	-52.00	-0.20
59	2446.10	2	-52.50	-52.00	-0.50
60	2446.05	2	-52.80	-52.00	-0.80
61	2446.00	2	-53.20	-52.00	-1.20
62	2445.95	2	-52.70	-52.00	-0.70
63	2445.90	2	-53.00	-52.00	-1.00
64	2445.85	2	-52.70	-52.00	-0.70
65	2445.80	2	-52.90	-52.00	-0.90
66	2445.75	2	-53.40	-52.00	-1.40
67	2445.70	2	-53.00	-52.00	-1.00
68	2445.65	2	-53.30	-52.00	-1.30
69	2445.60	2	-52.00	-52.00	0.00
70	2445.55	2	-51.80	-52.00	0.20
71	2445.50	2	-51.50	-52.00	0.50
72	2445.45	2	-51.20	-52.00	0.80
73	2445.40	2	-51.10	-52.00	0.90
74	2445.35	2	-51.20	-52.00	0.80
75	2445.30	2	-53.00	-52.00	-1.00
76	2445.25	2	-53.10	-52.00	-1.10
77	2445.20	2	-53.70	-52.00	-1.70
78	2445.15	2	-54.30	-52.00	-2.30
79	2445.10	2	-54.70	-52.00	-2.70
80	2445.05	2	-54.50	-52.00	-2.50
81	2445.00	2	-54.60	-52.00	-2.60
82	2444.95	2	-53.90	-52.00	-1.90
83	2444.90	2	-53.50	-52.00	-1.50
84	2444.85	2	-52.90	-52.00	-0.90
85	2444.80	2	-53.30	-52.00	-1.30



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
86	2444.75	2	-52.50	-52.00	-0.50
87	2444.70	2	-53.30	-52.00	-1.30
88	2444.65	2	-52.60	-52.00	-0.60
89	2444.60	2	-52.30	-52.00	-0.30
90	2444.55	2	-52.00	-52.00	0.00
91	2444.50	2	-51.60	-52.00	0.40
92	2444.45	2	-52.10	-52.00	-0.10
93	2444.40	2	-51.70	-52.00	0.30
94	2444.35	2	-52.70	-52.00	-0.70
95	2444.30	2	-54.20	-52.00	-2.20
96	2444.25	2	-54.60	-52.00	-2.60
97	2444.20	2	-54.90	-52.00	-2.90
98	2444.15	2	-54.80	-52.00	-2.80
99	2444.10	2	-54.80	-52.00	-2.80
100	2444.05	2	-54.60	-52.00	-2.60
101	2444.00	2	-54.20	-52.00	-2.20
102	2443.95	2	-52.90	-52.00	-0.90
103	2443.90	2	-53.30	-52.00	-1.30
104	2443.85	2	-52.40	-52.00	-0.40
105	2443.80	2	-52.60	-52.00	-0.60
106	2443.75	2	-52.70	-52.00	-0.70
107	2443.70	2	-53.00	-52.00	-1.00
108	2443.65	2	-53.50	-52.00	-1.50
109	2443.60	2	-53.70	-52.00	-1.70
110	2443.55	2	-53.80	-52.00	-1.80
111	2443.50	2	-53.60	-52.00	-1.60
112	2443.45	2	-53.80	-52.00	-1.80
113	2443.40	2	-53.10	-52.00	-1.10
114	2443.35	2	-53.40	-52.00	-1.40
115	2443.30	2	-54.70	-52.00	-2.70
116	2443.25	2	-54.90	-52.00	-2.90
117	2443.20	2	-54.60	-52.00	-2.60
118	2443.15	2	-54.30	-52.00	-2.30
119	2443.10	2	-54.40	-52.00	-2.40
120	2443.05	2	-53.70	-52.00	-1.70
121	2443.00	2	-54.00	-52.00	-2.00
122	2442.95	2	-53.10	-52.00	-1.10
123	2442.90	2	-53.60	-52.00	-1.60
124	2442.85	2	-53.30	-52.00	-1.30
125	2442.80	2	-53.70	-52.00	-1.70
126	2442.75	2	-54.00	-52.00	-2.00
127	2442.70	2	-54.50	-52.00	-2.50
128	2442.65	2	-53.60	-52.00	-1.60
129	2442.60	2	-52.80	-52.00	-0.80
130	2442.55	2	-51.50	-52.00	0.50
131	2442.50	2	-50.90	-52.00	1.10
132	2442.45	2	-49.60	-52.00	2.40
133	2442.40	2	-48.50	-52.00	3.50



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
 Description of EUT: 2.4 GHz low power WLAN integrated card
 Manufacturer: Agere Systems Nederland B.V.
 Brand mark: Agere
 Type: PC24-11-FC/R
 FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
134	2442.35	2	-47.10	-52.00	4.90
135	2442.30	2	-47.40	-52.00	4.60
136	2442.25	2	-47.70	-52.00	4.30
137	2442.20	2	-47.60	-52.00	4.40
138	2442.15	2	-47.60	-52.00	4.40
139	2442.10	2	-48.30	-52.00	3.70
140	2442.05	2	-50.20	-52.00	1.80
141	2442.00	2	-51.90	-52.00	0.10
142	2441.95	2	-52.30	-52.00	-0.30
143	2441.90	2	-53.10	-52.00	-1.10
144	2441.85	2	-53.90	-52.00	-1.90
145	2441.80	2	-54.20	-52.00	-2.20
146	2441.75	2	-54.40	-52.00	-2.40
147	2441.70	2	-55.50	-52.00	-3.50
148	2441.65	2	-55.50	-52.00	-3.50
149	2441.60	2	-54.50	-52.00	-2.50
150	2441.55	2	-53.90	-52.00	-1.90
151	2441.50	2	-53.30	-52.00	-1.30
152	2441.45	2	-53.10	-52.00	-1.10
153	2441.40	2	-52.60	-52.00	-0.60
154	2441.35	2	-53.20	-52.00	-1.20
155	2441.30	2	-54.80	-52.00	-2.80
156	2441.25	2	-54.90	-52.00	-2.90
157	2441.20	2	-55.10	-52.00	-3.10
158	2441.15	2	-54.70	-52.00	-2.70
159	2441.10	2	-54.30	-52.00	-2.30
160	2441.05	2	-54.40	-52.00	-2.40
161	2441.00	2	-54.60	-52.00	-2.60
162	2440.95	2	-52.80	-52.00	-0.80
163	2440.90	2	-53.30	-52.00	-1.30
164	2440.85	2	-52.90	-52.00	-0.90
165	2440.80	2	-52.80	-52.00	-0.80
166	2440.75	2	-52.90	-52.00	-0.90
167	2440.70	2	-53.70	-52.00	-1.70
168	2440.65	2	-54.60	-52.00	-2.60
169	2440.60	2	-54.40	-52.00	-2.40
170	2440.55	2	-54.40	-52.00	-2.40
171	2440.50	2	-53.80	-52.00	-1.80
172	2440.45	2	-53.90	-52.00	-1.90
173	2440.40	2	-53.80	-52.00	-1.80
174	2440.35	2	-54.30	-52.00	-2.30
175	2440.30	2	-54.90	-52.00	-2.90
176	2440.25	2	-54.70	-52.00	-2.70
177	2440.20	2	-54.30	-52.00	-2.30
178	2440.15	2	-54.00	-52.00	-2.00
179	2440.10	2	-54.00	-52.00	-2.00
180	2440.05	2	-53.50	-52.00	-1.50
181	2440.00	2	-52.70	-52.00	-0.70



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
182	2439.95	2	-51.60	-52.00	0.40
183	2439.90	2	-51.70	-52.00	0.30
184	2439.85	2	-51.60	-52.00	0.40
185	2439.80	2	-52.50	-52.00	-0.50
186	2439.75	2	-53.80	-52.00	-1.80
187	2439.70	2	-54.00	-52.00	-2.00
188	2439.65	2	-54.50	-52.00	-2.50
189	2439.60	2	-54.00	-52.00	-2.00
190	2439.55	2	-54.10	-52.00	-2.10
191	2439.50	2	-53.50	-52.00	-1.50
192	2439.45	2	-53.60	-52.00	-1.60
193	2439.40	2	-53.20	-52.00	-1.20
194	2439.35	2	-52.80	-52.00	-0.80
195	2439.30	2	-53.20	-52.00	-1.20
196	2439.25	2	-52.90	-52.00	-0.90
197	2439.20	2	-52.60	-52.00	-0.60
198	2439.15	2	-52.10	-52.00	-0.10
199	2439.10	2	-51.50	-52.00	0.50
200	2439.05	2	-51.80	-52.00	0.20
201	2439.00	2	-51.60	-52.00	0.40
202	2438.95	2	-51.80	-52.00	0.20
203	2438.90	2	-51.90	-52.00	0.10
204	2438.85	2	-51.80	-52.00	0.20
205	2438.80	2	-52.80	-52.00	-0.80
206	2438.75	2	-53.70	-52.00	-1.70
207	2438.70	2	-53.90	-52.00	-1.90
208	2438.65	2	-53.80	-52.00	-1.80
209	2438.60	2	-53.10	-52.00	-1.10
210	2438.55	2	-52.70	-52.00	-0.70
211	2438.50	2	-52.00	-52.00	0.00
212	2438.45	2	-51.10	-52.00	0.90
213	2438.40	2	-51.30	-52.00	0.70
214	2438.35	2	-50.80	-52.00	1.20
215	2438.30	2	-51.60	-52.00	0.40
216	2438.25	2	-51.40	-52.00	0.60
217	2438.20	2	-51.00	-52.00	1.00
218	2438.15	2	-52.20	-52.00	-0.20
219	2438.10	2	-51.90	-52.00	0.10
220	2438.05	2	-52.50	-52.00	-0.50
221	2438.00	2	-52.40	-52.00	-0.40
222	2437.95	2	-51.30	-52.00	0.70
223	2437.90	2	-51.50	-52.00	0.50
224	2437.85	2	-51.60	-52.00	0.40
225	2437.80	2	-52.10	-52.00	-0.10
226	2437.75	2	-51.70	-52.00	0.30
227	2437.70	2	-51.00	-52.00	1.00
228	2437.65	2	-51.10	-52.00	0.90
229	2437.60	2	-50.90	-52.00	1.10



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
230	2437.55	2	-51.20	-52.00	0.80
231	2437.50	2	-51.30	-52.00	0.70
232	2437.45	2	-51.10	-52.00	0.90
233	2437.40	2	-51.00	-52.00	1.00
234	2437.35	2	-51.10	-52.00	0.90
235	2437.30	2	-51.70	-52.00	0.30
236	2437.25	2	-51.30	-52.00	0.70
237	2437.20	2	-51.20	-52.00	0.80
238	2437.15	2	-50.70	-52.00	1.30
239	2437.10	2	-50.10	-52.00	1.90
240	2437.05	2	-48.60	-52.00	3.40
241	2437.00	2	-47.70	-52.00	4.30
242	2436.95	2	-51.40	-52.00	0.60
243	2436.90	2	-51.00	-52.00	1.00
244	2436.85	2	-51.10	-52.00	0.90
245	2436.80	2	-51.70	-52.00	0.30
246	2436.75	2	-52.20	-52.00	-0.20
247	2436.70	2	-52.40	-52.00	-0.40
248	2436.65	2	-52.60	-52.00	-0.60
249	2436.60	2	-52.70	-52.00	-0.70
250	2436.55	2	-52.60	-52.00	-0.60
251	2436.50	2	-52.10	-52.00	-0.10
252	2436.45	2	-52.00	-52.00	0.00
253	2436.40	2	-51.80	-52.00	0.20
254	2436.35	2	-52.40	-52.00	-0.40
255	2436.30	2	-52.50	-52.00	-0.50
256	2436.25	2	-52.90	-52.00	-0.90
257	2436.20	2	-52.10	-52.00	-0.10
258	2436.15	2	-52.00	-52.00	0.00
259	2436.10	2	-52.10	-52.00	-0.10
260	2436.05	2	-51.80	-52.00	0.20
261	2436.00	2	-51.50	-52.00	0.50
262	2435.95	2	-51.20	-52.00	0.80
263	2435.90	2	-51.40	-52.00	0.60
264	2435.85	2	-51.80	-52.00	0.20
265	2435.80	2	-52.10	-52.00	-0.10
266	2435.75	2	-52.00	-52.00	0.00
267	2435.70	2	-52.80	-52.00	-0.80
268	2435.65	2	-55.20	-52.00	-3.20
269	2435.60	2	-52.80	-52.00	-0.80
270	2435.55	2	-53.40	-52.00	-1.40
271	2435.50	2	-56.00	-52.00	-4.00
272	2435.45	2	-54.90	-52.00	-2.90
273	2435.40	2	-51.40	-52.00	0.60
274	2435.35	2	-52.90	-52.00	-0.90
275	2435.30	2	-52.50	-52.00	-0.50
276	2435.25	2	-54.20	-52.00	-2.20
277	2435.20	2	-54.60	-52.00	-2.60



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
278	2435.15	2	-52.00	-52.00	0.00
279	2435.10	2	-51.60	-52.00	0.40
280	2435.05	2	-51.80	-52.00	0.20
281	2435.00	2	-51.80	-52.00	0.20

Table 3 – Test results at a transmission bit-rate of 2 Mbps.

After 20% of the worst measurement results have been discarded, it shows that the worst remaining value of the J/S ratio is -1.8 dB (=Mj).

Measured processing gain is: $G_p = 13.3 \text{ dB} + (-1.8 \text{ dB}) + 2.0 \text{ dB} = 13.5 \text{ dB}$ (for 2.0 Mb/s modulation)

Test engineer

Signature : 

Name : Onno H. Hoekstra

Date : April 29, 2002



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

3.2 Test results at a transmission bit-rate of 11 Mbps.

The results of tests on the EUT, carried out in accordance with 47 CFR Part 15.247 (e)(2), are depicted in table 4.

Pass band : $f_0 \pm 7$ MHz
 Channel : 2442.0 MHz (channel 7)
 Transmission bit-rate : 11 Mbps

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
1	2449.00	11	-53.20	-52.00	-1.20
2	2448.95	11	-52.90	-52.00	-0.90
3	2448.90	11	-53.70	-52.00	-1.70
4	2448.85	11	-53.30	-52.00	-1.30
5	2448.80	11	-54.70	-52.00	-2.70
6	2448.75	11	-55.00	-52.00	-3.00
7	2448.70	11	-54.30	-52.00	-2.30
8	2448.65	11	-54.50	-52.00	-2.50
9	2448.60	11	-54.30	-52.00	-2.30
10	2448.55	11	-54.20	-52.00	-2.20
11	2448.50	11	-54.00	-52.00	-2.00
12	2448.45	11	-53.50	-52.00	-1.50
13	2448.40	11	-53.00	-52.00	-1.00
14	2448.35	11	-52.80	-52.00	-0.80
15	2448.30	11	-53.20	-52.00	-1.20
16	2448.25	11	-53.50	-52.00	-1.50
17	2448.20	11	-53.90	-52.00	-1.90
18	2448.15	11	-54.40	-52.00	-2.40
19	2448.10	11	-56.00	-52.00	-4.00
20	2448.05	11	-55.20	-52.00	-3.20
21	2448.00	11	-55.60	-52.00	-3.60
22	2447.95	11	-55.90	-52.00	-3.90
23	2447.90	11	-56.00	-52.00	-4.00
24	2447.85	11	-56.40	-52.00	-4.40
25	2447.80	11	-56.70	-52.00	-4.70
26	2447.75	11	-56.50	-52.00	-4.50
27	2447.70	11	-56.70	-52.00	-4.70
28	2447.65	11	-56.90	-52.00	-4.90
29	2447.60	11	-57.20	-52.00	-5.20
30	2447.55	11	-57.50	-52.00	-5.50
31	2447.50	11	-58.70	-52.00	-6.70
32	2447.45	11	-59.00	-52.00	-7.00
33	2447.40	11	-57.50	-52.00	-5.50
34	2447.35	11	-57.70	-52.00	-5.70
35	2447.30	11	-58.60	-52.00	-6.60
36	2447.25	11	-58.40	-52.00	-6.40
37	2447.20	11	-58.40	-52.00	-6.40
38	2447.15	11	-58.30	-52.00	-6.30
39	2447.10	11	-58.10	-52.00	-6.10



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
40	2447.05	11	-57.80	-52.00	-5.80
41	2447.00	11	-56.00	-52.00	-4.00
42	2446.95	11	-56.70	-52.00	-4.70
43	2446.90	11	-57.00	-52.00	-5.00
44	2446.85	11	-56.60	-52.00	-4.60
45	2446.80	11	-56.70	-52.00	-4.70
46	2446.75	11	-56.50	-52.00	-4.50
47	2446.70	11	-57.80	-52.00	-5.80
48	2446.65	11	-57.90	-52.00	-5.90
49	2446.60	11	-57.90	-52.00	-5.90
50	2446.55	11	-57.10	-52.00	-5.10
51	2446.50	11	-57.20	-52.00	-5.20
52	2446.45	11	-56.70	-52.00	-4.70
53	2446.40	11	-58.70	-52.00	-6.70
54	2446.35	11	-56.90	-52.00	-4.90
55	2446.30	11	-56.10	-52.00	-4.10
56	2446.25	11	-56.30	-52.00	-4.30
57	2446.20	11	-56.40	-52.00	-4.40
58	2446.15	11	-56.10	-52.00	-4.10
59	2446.10	11	-56.80	-52.00	-4.80
60	2446.05	11	-57.20	-52.00	-5.20
61	2446.00	11	-58.00	-52.00	-6.00
62	2445.95	11	-59.70	-52.00	-7.70
63	2445.90	11	-60.20	-52.00	-8.20
64	2445.85	11	-60.80	-52.00	-8.80
65	2445.80	11	-61.30	-52.00	-9.30
66	2445.75	11	-60.80	-52.00	-8.80
67	2445.70	11	-62.00	-52.00	-10.00
68	2445.65	11	-61.70	-52.00	-9.70
69	2445.60	11	-60.80	-52.00	-8.80
70	2445.55	11	-59.60	-52.00	-7.60
71	2445.50	11	-59.40	-52.00	-7.40
72	2445.45	11	-58.90	-52.00	-6.90
73	2445.40	11	-59.10	-52.00	-7.10
74	2445.35	11	-58.70	-52.00	-6.70
75	2445.30	11	-59.00	-52.00	-7.00
76	2445.25	11	-59.20	-52.00	-7.20
77	2445.20	11	-59.40	-52.00	-7.40
78	2445.15	11	-59.90	-52.00	-7.90
79	2445.10	11	-60.10	-52.00	-8.10
80	2445.05	11	-59.90	-52.00	-7.90
81	2445.00	11	-60.70	-52.00	-8.70
82	2444.95	11	-60.60	-52.00	-8.60
83	2444.90	11	-60.30	-52.00	-8.30
84	2444.85	11	-59.90	-52.00	-7.90
85	2444.80	11	-58.90	-52.00	-6.90
86	2444.75	11	-58.80	-52.00	-6.80
87	2444.70	11	-58.60	-52.00	-6.60



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
88	2444.65	11	-57.70	-52.00	-5.70
89	2444.60	11	-58.00	-52.00	-6.00
90	2444.55	11	-57.70	-52.00	-5.70
91	2444.50	11	-58.80	-52.00	-6.80
92	2444.45	11	-59.60	-52.00	-7.60
93	2444.40	11	-60.40	-52.00	-8.40
94	2444.35	11	-60.30	-52.00	-8.30
95	2444.30	11	-60.50	-52.00	-8.50
96	2444.25	11	-61.90	-52.00	-9.90
97	2444.20	11	-61.20	-52.00	-9.20
98	2444.15	11	-61.00	-52.00	-9.00
99	2444.10	11	-61.20	-52.00	-9.20
100	2444.05	11	-60.90	-52.00	-8.90
101	2444.00	11	-60.80	-52.00	-8.80
102	2443.95	11	-60.70	-52.00	-8.70
103	2443.90	11	-60.70	-52.00	-8.70
104	2443.85	11	-60.50	-52.00	-8.50
105	2443.80	11	-60.50	-52.00	-8.50
106	2443.75	11	-59.90	-52.00	-7.90
107	2443.70	11	-59.80	-52.00	-7.80
108	2443.65	11	-60.00	-52.00	-8.00
109	2443.60	11	-59.90	-52.00	-7.90
110	2443.55	11	-60.10	-52.00	-8.10
111	2443.50	11	-60.30	-52.00	-8.30
112	2443.45	11	-60.70	-52.00	-8.70
113	2443.40	11	-60.30	-52.00	-8.30
114	2443.35	11	-60.20	-52.00	-8.20
115	2443.30	11	-60.10	-52.00	-8.10
116	2443.25	11	-60.60	-52.00	-8.60
117	2443.20	11	-60.50	-52.00	-8.50
118	2443.15	11	-60.70	-52.00	-8.70
119	2443.10	11	-60.30	-52.00	-8.30
120	2443.05	11	-60.80	-52.00	-8.80
121	2443.00	11	-60.40	-52.00	-8.40
122	2442.95	11	-60.60	-52.00	-8.60
123	2442.90	11	-61.10	-52.00	-9.10
124	2442.85	11	-60.80	-52.00	-8.80
125	2442.80	11	-61.00	-52.00	-9.00
126	2442.75	11	-60.60	-52.00	-8.60
127	2442.70	11	-60.80	-52.00	-8.80
128	2442.65	11	-61.00	-52.00	-9.00
129	2442.60	11	-60.90	-52.00	-8.90
130	2442.55	11	-61.70	-52.00	-9.70
131	2442.50	11	-61.10	-52.00	-9.10
132	2442.45	11	-62.00	-52.00	-10.00
133	2442.40	11	-62.20	-52.00	-10.20
134	2442.35	11	-62.10	-52.00	-10.10
135	2442.30	11	-63.00	-52.00	-11.00



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
136	2442.25	11	-63.80	-52.00	-11.80
137	2442.20	11	-62.50	-52.00	-10.50
138	2442.15	11	-62.10	-52.00	-10.10
139	2442.10	11	-61.40	-52.00	-9.40
140	2442.05	11	-61.30	-52.00	-9.30
141	2442.00	11	-61.20	-52.00	-9.20
142	2441.95	11	-60.80	-52.00	-8.80
143	2441.90	11	-61.00	-52.00	-9.00
144	2441.85	11	-60.80	-52.00	-8.80
145	2441.80	11	-60.70	-52.00	-8.70
146	2441.75	11	-60.90	-52.00	-8.90
147	2441.70	11	-61.20	-52.00	-9.20
148	2441.65	11	-60.10	-52.00	-8.10
149	2441.60	11	-59.40	-52.00	-7.40
150	2441.55	11	-61.20	-52.00	-9.20
151	2441.50	11	-61.30	-52.00	-9.30
152	2441.45	11	-60.80	-52.00	-8.80
153	2441.40	11	-60.30	-52.00	-8.30
154	2441.35	11	-60.10	-52.00	-8.10
155	2441.30	11	-59.60	-52.00	-7.60
156	2441.25	11	-58.80	-52.00	-6.80
157	2441.20	11	-59.50	-52.00	-7.50
158	2441.15	11	-59.50	-52.00	-7.50
159	2441.10	11	-59.80	-52.00	-7.80
160	2441.05	11	-60.20	-52.00	-8.20
161	2441.00	11	-61.80	-52.00	-9.80
162	2440.95	11	-61.80	-52.00	-9.80
163	2440.90	11	-60.50	-52.00	-8.50
164	2440.85	11	-60.60	-52.00	-8.60
165	2440.80	11	-60.60	-52.00	-8.60
166	2440.75	11	-60.40	-52.00	-8.40
167	2440.70	11	-60.50	-52.00	-8.50
168	2440.65	11	-60.90	-52.00	-8.90
169	2440.60	11	-60.70	-52.00	-8.70
170	2440.55	11	-60.50	-52.00	-8.50
171	2440.50	11	-60.60	-52.00	-8.60
172	2440.45	11	-60.70	-52.00	-8.70
173	2440.40	11	-60.60	-52.00	-8.60
174	2440.35	11	-60.70	-52.00	-8.70
175	2440.30	11	-61.40	-52.00	-9.40
176	2440.25	11	-60.60	-52.00	-8.60
177	2440.20	11	-60.10	-52.00	-8.10
178	2440.15	11	-59.30	-52.00	-7.30
179	2440.10	11	-59.10	-52.00	-7.10
180	2440.05	11	-59.20	-52.00	-7.20
181	2440.00	11	-57.50	-52.00	-5.50
182	2439.95	11	-57.00	-52.00	-5.00
183	2439.90	11	-56.80	-52.00	-4.80



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
184	2439.85	11	-57.20	-52.00	-5.20
185	2439.80	11	-58.90	-52.00	-6.90
186	2439.75	11	-58.80	-52.00	-6.80
187	2439.70	11	-59.20	-52.00	-7.20
188	2439.65	11	-59.00	-52.00	-7.00
189	2439.60	11	-60.70	-52.00	-8.70
190	2439.55	11	-60.50	-52.00	-8.50
191	2439.50	11	-59.10	-52.00	-7.10
192	2439.45	11	-60.30	-52.00	-8.30
193	2439.40	11	-59.20	-52.00	-7.20
194	2439.35	11	-59.30	-52.00	-7.30
195	2439.30	11	-59.40	-52.00	-7.40
196	2439.25	11	-59.10	-52.00	-7.10
197	2439.20	11	-58.50	-52.00	-6.50
198	2439.15	11	-58.80	-52.00	-6.80
199	2439.10	11	-59.00	-52.00	-7.00
200	2439.05	11	-59.70	-52.00	-7.70
201	2439.00	11	-59.70	-52.00	-7.70
202	2438.95	11	-60.40	-52.00	-8.40
203	2438.90	11	-59.20	-52.00	-7.20
204	2438.85	11	-58.90	-52.00	-6.90
205	2438.80	11	-60.80	-52.00	-8.80
206	2438.75	11	-62.80	-52.00	-10.80
207	2438.70	11	-61.40	-52.00	-9.40
208	2438.65	11	-60.20	-52.00	-8.20
209	2438.60	11	-59.40	-52.00	-7.40
210	2438.55	11	-58.60	-52.00	-6.60
211	2438.50	11	-56.20	-52.00	-4.20
212	2438.45	11	-56.00	-52.00	-4.00
213	2438.40	11	-55.80	-52.00	-3.80
214	2438.35	11	-55.60	-52.00	-3.60
215	2438.30	11	-56.20	-52.00	-4.20
216	2438.25	11	-57.30	-52.00	-5.30
217	2438.20	11	-57.70	-52.00	-5.70
218	2438.15	11	-57.30	-52.00	-5.30
219	2438.10	11	-57.10	-52.00	-5.10
220	2438.05	11	-57.80	-52.00	-5.80
221	2438.00	11	-58.20	-52.00	-6.20
222	2437.95	11	-57.80	-52.00	-5.80
223	2437.90	11	-59.00	-52.00	-7.00
224	2437.85	11	-58.80	-52.00	-6.80
225	2437.80	11	-58.70	-52.00	-6.70
226	2437.75	11	-58.20	-52.00	-6.20
227	2437.70	11	-57.70	-52.00	-5.70
228	2437.65	11	-56.30	-52.00	-4.30
229	2437.60	11	-56.40	-52.00	-4.40
230	2437.55	11	-56.20	-52.00	-4.20
231	2437.50	11	-56.00	-52.00	-4.00



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
232	2437.45	11	-55.80	-52.00	-3.80
233	2437.40	11	-55.70	-52.00	-3.70
234	2437.35	11	-55.50	-52.00	-3.50
235	2437.30	11	-55.60	-52.00	-3.60
236	2437.25	11	-55.00	-52.00	-3.00
237	2437.20	11	-54.80	-52.00	-2.80
238	2437.15	11	-54.90	-52.00	-2.90
239	2437.10	11	-54.70	-52.00	-2.70
240	2437.05	11	-54.70	-52.00	-2.70
241	2437.00	11	-55.20	-52.00	-3.20
242	2436.95	11	-57.80	-52.00	-5.80
243	2436.90	11	-58.20	-52.00	-6.20
244	2436.85	11	-58.50	-52.00	-6.50
245	2436.80	11	-59.20	-52.00	-7.20
246	2436.75	11	-59.90	-52.00	-7.90
247	2436.70	11	-59.60	-52.00	-7.60
248	2436.65	11	-59.70	-52.00	-7.70
249	2436.60	11	-60.20	-52.00	-8.20
250	2436.55	11	-58.90	-52.00	-6.90
251	2436.50	11	-60.50	-52.00	-8.50
252	2436.45	11	-60.50	-52.00	-8.50
253	2436.40	11	-58.80	-52.00	-6.80
254	2436.35	11	-58.30	-52.00	-6.30
255	2436.30	11	-56.70	-52.00	-4.70
256	2436.25	11	-56.80	-52.00	-4.80
257	2436.20	11	-55.80	-52.00	-3.80
258	2436.15	11	-56.70	-52.00	-4.70
259	2436.10	11	-57.20	-52.00	-5.20
260	2436.05	11	-57.20	-52.00	-5.20
261	2436.00	11	-57.20	-52.00	-5.20
262	2435.95	11	-57.80	-52.00	-5.80
263	2435.90	11	-57.60	-52.00	-5.60
264	2435.85	11	-57.30	-52.00	-5.30
265	2435.80	11	-57.00	-52.00	-5.00
266	2435.75	11	-56.40	-52.00	-4.40
267	2435.70	11	-56.60	-52.00	-4.60
268	2435.65	11	-56.20	-52.00	-4.20
269	2435.60	11	-56.10	-52.00	-4.10
270	2435.55	11	-55.80	-52.00	-3.80
271	2435.50	11	-55.60	-52.00	-3.60
272	2435.45	11	-56.50	-52.00	-4.50
273	2435.40	11	-55.70	-52.00	-3.70
274	2435.35	11	-56.00	-52.00	-4.00
275	2435.30	11	-55.40	-52.00	-3.40
276	2435.25	11	-55.40	-52.00	-3.40
277	2435.20	11	-55.80	-52.00	-3.80
278	2435.15	11	-56.60	-52.00	-4.60
279	2435.10	11	-55.20	-52.00	-3.20



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

Step	Frequency (MHz)	Transmission bit-rate (Mbps)	J (dBm)	S (dBm)	J/S (dB)
280	2435.05	11	-55.10	-52.00	-3.10
281	2435.00	11	-54.40	-52.00	-2.40

Table 4 – Test results at a transmission bit-rate of 11 Mbps.

After 20% of the worst measurement results have been discarded, it shows that the worst remaining value of the J/S ratio is -8.6 dB (=Mj).

Measured processing gain is: $G_p = 17.0 \text{ dB} + (-8.6 \text{ dB}) + 2.0 \text{ dB} = 10.4 \text{ dB}$ (for 11.0 Mb/s modulation).

Test engineer

Signature

Name

: Onno H. Hoekstra

Date

: April 29, 2002



Test specification(s): 47 CFR Part 15 (2001-12-18), sect. 15.247 (e)(2)
Description of EUT: 2.4 GHz low power WLAN integrated card
Manufacturer: Agere Systems Nederland B.V.
Brand mark: Agere
Type: PC24-11-FC/R
FCC ID: IMRWLPC2411R

4 List of utilized test equipment.

Inventory number	Description	Brand	Type
12471	Biconical antenna 20MHz-200MHz	EATON	94455-1
12473	Log-per antenna 200-1000MHz	EATON	96005
12476	Antenna mast	EMCO	TR3
12477	Antenna mast 1-4 mtr	Poelstra	--
12482	Loop antenna	EMCO	6507
12483	Guidehorn	EMCO	3115
12484	Guidehorn	EMCO	3115
12488	Guidehorn 18 - 26.5 GHz	EMCO	RA42-K-F-4B-C
12533	Signalgenerator	MARCONI	2032
12559	Digital storage oscilloscope	Le Croy	9310M
12561	DC Power Supply 20A/70V	DELTA	SM7020D
12567	Plotter	HP	7440A
12605	calibrated dipole 28MHz-1GHz	Emco	3121c
12608	HF milliwattmeter	Hewlett Packard	HP435a
12609	Power sensor 10MHz-18GHz	Hewlett Packard	HP8481A
12636	Polyester chamber	Polyforce	--
12640	Temperature chamber	Heraeus	VEM03/500
13664	Spectrum analyzer	HP	HP8593E
13078	Preamplifier 0.1 GHz - 12 GHz	Miteq	AMF-3D-001120-35-14p
13452	Digital multi meter	HP	34401A
13526	Signalgenerator 20 GHz	Hewlett & Packard	83620A
13594	Preamplifier 10 GHz - 25 GHz	Miteq	AMF-6D-100250-10p
13886	Open Area testsite	Comtest	--
14051	Anechoic room	Comtest	--
14450	2.4 GHz bandrejectfilter	BSC	XN-1783
15633	Biconilog Testantenna	Chase	CBL 6111B
15667	Measuring receiver	R&S	ESCS 30
99045	DC Power Supply 3A/30V	DELTA	E030/3
99055	Non-conducting support	NMi	--
99061	Non-conducting support 150cm	NMi	--
99068	Detector N-F/BNC-F	Radiall	R451576000
99069	Cable 5m RG214	NMi	--
99071	Cable 10m RG214	NMi	--
99076	Bandpassfilter 4 - 10 GHz	Reactel	7AS-7G-6G-511
99077	Regulating trafo	RFT	LTS006
99112	Tripod	Chase	--
99136	Bandpassfilter 10 - 26.5 GHz	Reactel	9HS-10G/26.5G-S11