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**IEEE P802.11  
Wireless LANs**

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**IPR letters received for IEEE P802.11**

**Date:** July 1, 1997

**Author:** Vic Hayes  
Lucent Technologies WCND B.V.  
Zadelstede 1-10  
3431 JZ Nieuwegein  
the Netherlands  
Phone: +31 30 609 7528  
Fax: +31 30 609 7556  
e-Mail: v.hayes@ieee.org

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**Abstract**

This document contains the responses on my letter of September 26, 1995 to the participants in IEEE P802.11 as well as to the notices given in various plenary meetings of the working group.

The letter requested 802.11 participants to report any IP in the area of our draft standard and further asked for letters with an assurance of licensing and for forwarding the letter to the company's IP manager.

This document represent the status as approved by PatCom.

### List of Companies or individuals responding

Company	IP Status
Aironet	IP statement available
AMD	IP statement available
Apple Computer	IP statement available
AT&T	IP statement available
Digital Ocean	IP statement available
IBM	IP statement available
Intermec	IP statement available
JRC	IP statement available
Lucent Technologies	IP statement available (Same as AT&T)
Matsushita Electric Works	"no IP" indication
Motorola	IP statement available

Norand	IP statement available
Novell	IP statement available
OSIA(sponsored by Ministry of Information & Communication, KOREA)	"no IP" indication
Proxim	IP statement available
Samsung Electronics	"no IP" indication
Sharp	"no IP" indication
Spectrix	IP statement available
Standard Microsystems Corp.	"no IP" indication
Symbol Technologies	IP statement available
Toshiba America	IP statement available
Xircom	IP statement available

**Aironet**

December 8, 1995,

IEEE Computer Society  
1730 Massachusetts Avenue, N.W.  
Washington, DC 20036-1992

Re: IEEE 802.11 draft Standard

Dear Sirs

This letter is written in response to your letter of September 26, 1995, which requested that Aironet Wireless Communications Inc. ("Aironet") notify IEEE of any patents related to the technology described in the IEEE 802.11 draft Standard. In this regard, we wish to bring to the attention of the Committee, U.S. Patent No. 5,276,680, Canadian Patent Application No. 2,040,234 and PCT Application No. PCT/CA92/00149.

If the proposed Standard, in its draft form, is adopted, to the extent that the Standard cannot be practiced without infringing one or more claims of the above patents, Aironet agrees that upon written request, it will grant a non-exclusive license under such claims that are required by the terms of the Standard to any requesting party on reasonable terms and conditions but not to any other claims. Our present understanding is that implementation of the Standard would require a license under claims 1, 3, 4, 5 and 7 of the '680 patent, but not claims 2, 6, and 8-14. Thus, the license would not include the latter claims. Claim in the foreign applications corresponding to the latter claims also would not be licensed.

This letter does not grant any right to IEEE with respect to Aironet patents, copyrights or other intellectual property rights.

Any party interested in the license described above, may write to:

Mr. Roger J. Murphy, Jr.  
President  
Aironet Wireless Communications, Inc.  
P. O. Box 5292  
Fairlawn Ohio 44334^0292

Sincerely

Roger J Murphy, Jr.

**AMD**

**ADVANCED MICRO DEVICES INC**

**One AMD Place P.O. Box 3453, Sunnyvale, CA 94088-3453. Phone +1 408 732 2400**

March 1, 1996

Institute of Electrical and Electronics Engineers  
c/o Mr. Victor Hayes  
Chairman IEEE 802.11  
Lucent Technologies, Inc.  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Re: Patent Statement in Reference to IEEE 802.11

To Whom It May Concern:

At this time, Advanced Micro Devices, Inc. ("AMD") is unaware of any patents or pending patent applications held by AMD relating to IEEE's draft 802.11 Wireless LAN Medium Access Control and Physical Layer Specifications. However, if AMD finds in the future that the standard adopted by the IEEE 802.11 Working Group is covered by one or more of the claims of any AMD patents or of any patents maturing from pending or future applications, AMD agrees, upon written request, to negotiate a non-exclusive license under such patents or such patents maturing from such applications on a non-discriminatory basis and on terms and conditions which AMD deems reasonable. Such negotiations will be held with the parties concerned and will be performed outside the IEEE.

Yours very truly,

Robert Krueger  
Vice President  
I/O and Networks Division  
Advanced Micro Devices, Inc.



## Apple Computer

June 24, 1996

*via facsimile*

Vic Hayes, Chair, IEEE P802. 11  
Lucent Technologies WCND B.V.  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands  
Voice: +31 30 609 7528  
Fax: +31 30 609 7555

Dear Mr. Hayes:

This letter is written in response to your letter of May 15, 1996, which requested that Apple Computer, Inc. confirm to the IEEE that we will provide licenses under our U.S. Patent Nos. 4,689,786 and 4,661,902 with respect to the proposed IEEE P802. 11 standard. In that regard:

In the event the proposed standard is adopted and the standard cannot be practiced without the use of the above-referenced patents or without the use of any other patents in Apple's portfolio of patents (which have not been reviewed with respect to the standard), Apple agrees upon written request to grant a nonexclusive license under such patent or patents on a nondiscriminatory basis and on reasonable terms and conditions.

This letter does not grant any right to the IEEE with respect to Apple copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to Paul D. Carmichael, Director of Patents and Trademarks, at the address on the letterhead.

Sincerely,

V. Randall Gard  
Senior Patent Counsel  
APPLE COMPUTER, INC.

Apple Computer, Inc.  
1 Infinite Loop  
Cupertino, CA 95014-2084  
(408) 996 1010  
Telex: 171-576

**AT&T**

November 1, 1995

Mr. Victor Hayes  
Chair IEEE P802. 11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Dear Mr. Hayes:

This letter is written in response to your letter of September 27, 1995, which requested that AT&T confirm to the IEEE that we will provide worldwide licenses for our patents with respect to the proposed IEEE P802. 11 standard. In this regard:

To the extent that AT&T has patents or may in the future obtain patents in this technology area which are essential to your recommendations, AT&T would be willing to negotiate licenses with other parties on a world-wide, non-discriminatory basis with reasonable terms and conditions. Such negotiations will be held with the parties concerned and will be performed outside of IEEE.

This letter does not grant any right to the IEEE with respect to AT&T's copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may contact Herb Winfield in writing at the address on the letterhead, by phone on 908-903-6256 or by facsimile on 908-903-6323.

Sincerely,  
Gene G. Partlow, Intellectual Property Vice President AT&T  
Suite 2000  
150 Allen Road  
Liberty Corner, NJ 07938



**Digital Ocean**

Vic Hayes  
Chair, IEEE P802.11  
Lucent Technology/WCND  
PO Box 492,3430 AL  
Nieuwegein, The Netherlands

Re: IP Letter

Dear Mr. Hayes:

This letter is written in response to your letter requesting that Digital Ocean, Inc. confirm to the IEEE 802 LMSC that should we have patents or pending patent applications that may be infringed by users of the IEEE P802.11 standard, we will provide licenses under them. In that regard:

In the event that proposed standard is adopted and the standard cannot be practiced without the use of material in one or more of Digital Ocean's patents, Digital Ocean agrees, upon written request, that it shall not refuse to grant a nonexclusive license under such patent for use in products conformant to the standard. Such nonexclusive licenses shall include reasonable and nondiscriminatory terms and conditions, including the company's then-current royalty rates.

This letter does not grant any right to the IEEE with respect to Digital Ocean's copyrights, trade or service marks or other intellectual property rights, whether or not they relate to the proposed standard. Any party interested in the license described above may write to Digital Ocean at the address shown at the bottom of this letterhead.

Regards,

Jeffery J. Alholm  
Chief Executive Officer  
Digital Ocean, Inc.

11206 Thompson Avenue • Lenexa, Kansas 66219-2303 • P.O. Box 14788 • Lenexa, Kansas 66285-4788  
913.888.3380 • FAX 913.888.3342 • AppleLink: DIGOCEAN.SYS

**IBM**

October 10, 1 99S

Vic Hayes  
Chairman, IEEE P802. 1  
c/o AT&T WCND Utrecht  
Zadelstede 1.10  
3431 JZ Nieuwegein, the Netherlands

Dear Mr. Hayes:

This letter is written in response to your letter to Ralph Yeager of IBM dated September 26, 1995, concerning the proposed IEEE P802. 11 standard.

At the present time, IBM is not aware of any IBM patents that relate to the proposed standard. IBM has not undertaken any study of this matter, however.

In the event the proposed standard is adopted and the standard cannot be practiced without the use of one or more issued patents, including design patents for type fonts but excluding other design patents, which are now or hereafter owned or controlled by IBM, IBM agrees upon request to grant a non-exclusive license under such patent or patents on a nondiscriminatory basis and on reasonable terms and conditions including its then current royalty rates and provided a similar grant under licensee's patents is made available to IBM.

Requests for information concerning IBM patent licenses should be directed in writing to:

IBM Director of Licensing  
IBM Corporation  
500 Columbus Avenue  
Thornwood, New York 10594  
USA

Sincerely,,

Walter L. Willigan  
Program Director, Licensing

**Intermec**

October 26, 1995

Mr. Vic Hayes  
Chair, IEEE P802. 11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Dear Vic,

This letter is written in response to your letter of September 26, 1995, which requested that Intermec confirm to the IEEE that we will provide licenses for any patents or patents pending which we may hold which are relevant to the proposed IEEE 802.11 standard. In that regard:

Intermec does not believe that they currently hold any patents, nor have any pending patent applications, which conflict with any technologies outlined in the proposed standard, as of October 26, 1995. In the event that patents issue to, or are acquired by, Intermec in the future which Intermec believes will read on devices operating under the proposed IEEE 802.11 Standard, Intermec will (upon written request from any third party) grant a nonexclusive, nontransferable sole and personal license under any such issued patent on a nondiscriminatory basis, on terms and conditions which Intermec deems reasonable.

This letter does not grant any right to the IEEE with respect to Intermec copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to Mr. L. David Rish, Intermec's Intellectual Property law counsel, Attn: Legal Department, MS 530, at the address on this letterhead.

In a related issue, Intermec would like to know what the IEEE's official position is with regard to the P802. 11 committee's efforts to work around patents. It is our understanding that the IEEE requires that the 802.11 committee make a good faith effort to exclude patented technologies if possible. Since there has been virtually no early disclosure of patent issues, how is the committee to make a good faith effort to not include such technologies? We appreciate your timely response to this question.

Sincerely,

Glen Sherwood  
Engineering Manager

Intermec Corporation  
6001 36th Avenue West  
P.O. Box 4280  
Everett, Washington 98302-9280

**JRC**

**Japan Radio Co., Ltd. (JRC)**

NO. 5-1-1 SHIMORENJAKU MITAKA-SHI  
TOKYO JAPAN

phone: +81 422 45 9222  
FAX: +81 422 49 6297

Mr. Vic Hayes, Chair, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

TOKYO February 6, 1996

**Patent response letter**

Dear Mr. Hayes:

This letter is written in response to your letter of September 26, 1995, which requested that JRC confirms to the IEEE that we will provide licenses under Japanese Patent Application Number and Title of the Invention (attached sheet) with respect to the proposed IEEE P802.11 standard. In that regard:

In the event the proposed standard is adopted and the standard cannot be practiced without the use of the patent referenced above, JRC agrees upon written request to grant a nonexclusive license under such patent on a nondiscriminatory basis and on reasonable terms and conditions including its then-current royalty rates.

This letter does not grant any right to the IEEE with respect to JRC's copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to Yoji Makishima at the address on the letterhead.

Sincerely,

Y. MAKISHIMA  
General Manager, R&D Dept  
Japan Radio Co.,Ltd.

Page 2 of 2  
Patent response letter

Attached sheet

<b>No.</b>	<b>Patent Application Number</b>	<b>Title of the Invention</b>
1	5-133090	Spread spectrum modulator-demodulator
2	5-133091	Spread spectrum receiver
3	5-183599	Wireless packet receiver
4	5-84386	Wired LAN to wireless LAN packet converter
5	5-46185	Wireless packet collision detection method
6	5-40944	Wireless LAN system
7	5-40819	Wireless packet error check method
8	5-288554	Wireless LAN repeater
9	5-275580	Wireless LAN hand-off method
10	6-1431	Spread spectrum modulator-demodulator
11	7-139580	Wireless LAN hand-off method
12	7-235748	Wireless LAN hand-off method

**Lucent Technologies**

December 18, 1996

Gene G. Partlow Intellectual Property Vice President	Lucent Technologies Inc. Suite 2000 150 Allen Road Liberty Corner, NJ 07938-1995  Telephone 908 903 6222 Facsimile 908 903 6321 E-Mail !gpartlow@mail.att.net
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Mr. Victor Hayes  
Chair IEEE P802. 11  
Lucent Technologies Inc. WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Dear Mr. Hayes:

This letter is written in response to your request that Lucent Technologies Inc. will provide worldwide licenses for our patents with respect to the proposed IEEE P802. 11 standard. In this regard:

To the extent that Lucent has patents or may in the future obtain patents in this technology area which are essential to your recommendations, Lucent would be willing to negotiate licenses with other parties on a world-wide, non-discriminatory basis with reasonable terms and conditions. Such negotiations will be held with the parties concerned and will be performed outside of IEEE.

This letter does not grant any right to the IEEE with respect to AT&T's copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may contact Eric Crefeld in writing at the address on the letterhead, by phone on 908-903-6262 or by facsimile on 908-903-6323.

Sincerely.

Was signed by  
Gene G. Partlow,

**MATSUSHITA ELECTRONICS WORKS  
RESEARCH & DEVELOPMENT LABORATORY, INC.**

401 River Oaks Parkway  
San Jose, CA 95134  
Phone: (408) 433 - 3386  
Facsimile: (408) 433 - 3387

December 11, 1995

Vic Hayes  
Chair, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, The Netherlands

Dear Vic Hayes,

I would like to apologize for this late response. In reference to your letter dated September 16, 1995, in regards to any known patents (please see attached). At this time we have no patents relating to the IEEE P802.11 Wireless LAN standard.

Sincerely,

Nobuo Matsuo  
Manager

**Motorola**

November 2, 1995

Mr. Vic Hayes  
Chairman  
IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Dear Mr. Hayes:

I refer to your letter of 26 September 1995 addressed to our Mr. Mark Demange requesting a letter of assurance as to Motorola's willingness to license certain technology relating to the standard being developed by IEEE P802.11 Wireless LAN standard committee .

Motorola has already made a statement dated 1 March 1994 as to its willingness to license its essential patents, and I enclose a copy of that statement.<sup>1</sup>

We believe this statement fulfills your requirements and our obligations.

Sincerely,

Hugh C. Dunlop  
European Patent Attorney  
MOTOROLA, Inc.

Corporate Offices  
1303 E. Algonquin Road  
Schaumburg, IL 60195

---

<sup>1</sup> Refer to doc.:94/36



**NORAND CORPORATION**

CORPORATE OFFICES  
550 SECOND STREET S.E.  
CEDAR RAPIDS, IOWA 52401  
PHONE (319) 369-3100

EXECUTIVE FAX (319) 369-3630

June 20, 1997

Mr. Victor Hayes  
Chair IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Dear Mr. Hayes:

This letter is written in response to your letter of September 26, 1995, which requested that Norand Corporation ("Norand") confirm that it will provide licenses under certain of its patents related to the proposed IEEE 802.11 standard. In this regard:

In the event the proposed IEEE 802.11 standard is adopted, and the standard cannot be practiced without the use of one or more patents which are now or hereafter owned by Norand, Norand would upon request be willing to negotiate a non-transferable non-exclusive, sole and personal license, under the relevant claims of such patent or patents, on a nondiscriminatory basis on reasonable terms and conditions.

This letter does not grant to the IEEE or any other party any right with respect to Norand's copyrights or other intellectual property rights (whether now or hereafter in existence) that relate to the proposed standard.

Very truly yours,

NORAND CORPORATION

Ronald L. Mahany  
Director of Systems Development

APPROVED BY:

---

John H. Sherman, Senior Patent Attorney  
Norand Corporation

**Novell**

October 20, 1995

Vic Hayes, Chair, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Re: Patent Response Letter

Dear Mr. Hayes:

This letter is written in response to your letter to Jon Walter Rosdahl of September 26, 1995, which requested that Novell, Inc., confirm to the IEEE that should we have patents or pending patent applications that may be infringed by users of the IEEE P802.11 standard, we will provide licenses under them. In that regard:

In the event the proposed standard is adopted and the standard cannot be practiced without the use of Novell's patents, Novell agrees upon written request to not refuse to grant a nonexclusive license under such patent and on reasonable terms and conditions including its then-current royalty rates.

This letter does not grant any right to the IEEE with respect to Novell's copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to:

Ernamarie Messenger  
Chief Patent Counsel  
Novell, Inc.  
Mail Stop A-232  
1555 N. Technology Way  
Orem, UT 84057-2399

David R. Bradford  
Senior Vice President and  
General Counsel

**OSIA(sponsored by Ministry of Information & Communication, KOREA).**

Date: Thu, 14 Dec 95 09:04:47 KST  
From: yhyun@sunchon.sunchon.ac.kr (yoe hyun )  
Message-Id: <9512140004.AA14199@sunchon.sunchon.ac.kr>  
To: VHAYES@wcd.nl.att.com  
X-Mailer: Microsoft Mail V3.0  
Content-Type: text  
Content-Length: 405

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Hi, Vic!

I am sorry that I did not response your letter of Sep. 26th.  
I am a professor and so no problem of intellectual property.  
And I am a member of OSIA(sponsored by Ministry of Information & Communication, KOREA). And no problem there too(there were no opinion about draft standard, every member was interested in the context of it.)

I am much sorry that I did not inform you.

Bye!

From Yoe, Hyun

**proxim**

January 19, 1996

Mr. Vic Hayes, Chair, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Dear Mr. Hayes:

This letter is written in response to your letter dated September 26, 1995, which requested that Proxim confirm to the IEEE that we will provide licenses for any patents which we may hold which are relevant to the proposed IEEE P802. 11 standard. In that regard, Proxim holds the following patents which may have relevance to the proposed IEEE P802.11 standard:

U.S. patent #5,077,753  
U.S. patent #5,231,634  
U.S. patent #5,412.687

In the event that the proposed standard is adopted and the standard cannot be practiced without the use of relevant Proxim patents, Proxim agrees upon written request to negotiate a nonexclusive license under such patents on a nondiscriminatory basis and on terms and conditions which Proxim deems reasonable. Such negotiations will be held with the parties concerned and will be performed outside the IEEE.

This letter does not grant any right to the IEEE with respect to Proxim copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to Mr. Keith B. Glover, Vice President of Finance and Administration, CFO, at the address on this letterhead.

Sincerely

David C. King  
Chairman, President and Chief Executive Officer

Proxim, Inc.  
295 North Bernardo Avenue  
Mountain View, CA 94043  
[415] 960 1630 Fax (415) 864 5181

May 1997

Doc: IEEE P802.11-97/42-R1

Inc RSA Data Security, Inc  
100 Marine Parkway  
Redwood City  
CA 94065  
USA

**RSA Data Security,**

June 14, 1995

Cheryl Rowden  
Administrator- Intellectual Property  
IEEE Standards Department  
455 Hoes Lane  
P.O. Box 1331  
Piscataway, NJ 08855-1331

Dear Cheryl,

Please accept this letter of assurance that RSA will do the following in support of the IEEE 802.11 standard:

1. RSA will provide access to a reference implementation of RC4. A software license, for implementation in software or hardware, will be made available to applicants under fair, equitable and nondiscriminatory term for the purpose of using the RC4 stream cipher in IEEE 802.11 LAN devices. The license terms will be according to RSA Data Security, Inc.'s standard OEM license agreement and will be offered to all applicants.

2. RSA would grant the right for IEEE 802.11 to incorporate any portion of RSA's publicly available documentation into the 802.11 standards publications provided appropriate acknowledgment is given to RSA Data Security, Inc.'s ownership of the copyright. This grant of rights would allow IEEE 802.11 to permit others to reproduce the resulting IEEE 802.11 standards publications.

3. RSA will offer the following royalty schedule to 802.11 implementors:

\$ 5,000 prepaid license fees:	\$1.00 per unit
\$ 15,000 prepaid license fees:	\$0.75 per unit
\$ 35,000 prepaid license fees:	\$0.50 per unit
\$ 70,000 prepaid license fees:	\$0.25 per unit
\$125,000 one time, per company, license fee.	no royalties

RSA looks forward to working with IEEE and helping to deliver a secure 802.11 standard to the marketplace.

Sincerely,

Paul Cordon  
Director of Sales

Enclosures:

TEL 415 595 8782  
FAX 415 595 1873

THE KEYS TO  
PRIVACY AND  
AUTHENTICATION

## Samsung Electronics in Cypress, Ca

From: ig2.att.att.com!slhc.com!hnguyen@att

Date: December 8, 1995

My name is Huy Nguyen from Samsung Electronics in Cypress, Ca. Currently I am a Product Manager for the WLAN product. So far we do not have any Intellectual Properties in the IEEE 802.11 Draft Standard. Please let me know if we can help you in other matters.

Best regards,

Huy Nguyen

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## Sharp

To: VHAYES@wcnd.ns-nl.att.com  
In-Reply-To: Your message of "Mon, 11 Dec 95 08:15:07 EST."  
<9512111315.AA12715@ig1.att.att.com>  
Date: Tue, 12 Dec 95 12:04:36 +0900  
From: WAKAI Hirohisa <wakai@nyanta.shpcsl.sharp.co.jp>  
X-Mailer: Microsoft Mail V3.0  
Content-Type: text  
Content-Length: 1134

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Dear Vic,

Thank you for your email with the documents regarding IP issue.  
I could get the two files successfully and forwarded the message to IP  
section of Sharp.

At this point of time I do not think Sharp does not have any patent  
that needs to implement the 802.11 specification. I ask the IP section  
if they agree the IP policy of IEEE committee.

I guess I have to respond at latest by begining of the next meeting,  
right? Do I need a formal letter with a signature of the person who is  
responsible to that issue? Or can I send the response letter without  
signature as a response to the investigation by email?

Regards,  
Hiro

--

From: Hirohisa WAKAI  
SUPERVISOR  
ITRL-1, R & D Group,  
(Research Dept. 1  
Information Technology Research Laboratories  
Corporate Research and Development Group)  
SHARP Corporation  
2613-1 Ichinomoto-Cho, Tenri, NARA 632 JAPAN  
Fax;+81(7436)5-2163, Voice;+81(7436)5-2466  
E-Mail; wakai@shpcsl.sharp.co.jp

## Spectrix

October 13, 1995

Mr. Vic Hayes, Chair, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Dear Vic,

This is a response to your letter of September 26, 1995, regarding patents.

Spectrix has previously written two letters to you on the subject of Spectrix's patents<sup>2</sup>. We believe that these letters responded to the subject adequately and there is no need to send new letters on the same subject. Spectrix has made patent applications since the last letter but there have been no pending numbers issued. When these numbers are issued Spectrix will write another letter using the format suggested in your letter.

Yours truly,

C. Thomas Baumgartner

Vice President of Marketing

Spectrix Corporation  
106 Wilmot Road, Suite 250  
Deerfield, IL 60015-5150

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<sup>2</sup> See doc.: 93/134, which mentions US Patent No 5,099,346, March 24, 1992. The second letter mentions US patent 5,247,380.

**Standard Microsystems Corp**

From: ig4.att.att.com!smc.com!Bradley.Herrin@att

Date: December ,1995

Vic-

To date, Standard Microsystems Corp has no intellectual property that to my knowledge that would be violated via anything in the 802.11 spec. version 2.1.

Cheers-

Brad Herrin

Manager Portable Systems

Standard Microsystems Corp.

## Symbol

April 23, 1996

Mr. Victor Hayes  
Chair IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein  
The Netherlands

Dear Mr. Hayes:

This letter is written in response to your letter of September 27, 1995, which requested that Symbol Technologies, Inc. ("Symbol") confirm to the IEEE that it will provide worldwide licenses under certain of its patents related to the proposed IEEE 802.11 standard. In this regard:

In the event the proposed IEEE 802.11 standard is adopted, and the standard cannot be practiced without the use of one or more patents which are now or hereafter owned by Symbol, Symbol would upon request be willing to negotiate a non-exclusive, worldwide license, under the relevant claims of such patent or patents, on a nondiscriminatory basis and on reasonable terms and conditions including its then current royalty rates.

This letter does not grant to the IEEE or any other party any right with respect to Symbol's copyrights or other intellectual property rights (whether now or hereafter in existence) that relate to the proposed standard.

Very truly yours,

Richard Bravman  
Senior Vice President

SYMBOL TECHNOLOGIES, INC. One Symbol Plaza, Holtsville, NY 11742-1300 • 518 738-2400 Web site: <http://www.symbol.com>

**TOSHIBA**

TOSHIBA AMERICA INFORMATION SYSTEMS, INC.  
LEGAL DEPARTMENT  
9740 IRVINE BLVD., P.O. BOX 19724, IRVINE, CALIFORNIA 92618-1697  
TELEPHONE: (714) 583-3517, FAX (714) 587-6235

Donald S. Gray  
*Vice President, General Counsel & Secretary*  
David J. Harshman  
*Assistant general Counsel*  
Julie L. Perkal  
*Senior Attorney*  
Pohleng Ng  
*Senior Attorney*  
Stephen M. Moran  
*Senior Attorney*  
Koji Ichikawa  
*Associate Attorney*

June 23, 1997

Mr. Vic Hayes, Chair, IEEE P802. 11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Re: Proposed IEEE P802.11 Standard  
Toshiba America Information Systems, Inc. - U.S. Patent 5,467,341

Dear Mr. Hayes:

This letter is written in response to your email to Mr. ryan Tze dated June 13, 1997, which requested that toshiba America Information Systems, Inc. ("TAIS") confirm to the IEEE that we will provide licences under US Patent No. 5,467,341 with respect to the proposed IEEE P802.11 standard. In that regard:

In the event the proposed standard is adopted and the standard cannot be practiced without the use of the patent referenced above, TAIS agrees upon written request to grant a nonexclusive license under such patent on a nondiscriminatory basis and on reasonable terms and conditions including its then-current royalty rates.

However, if anyone who uses such a standard owns any other patent wich covers any or all of the contents of such a standard, and lays claims thereto, such a user may be excluded from the application of the aforesaid provision. This letter does not grant any right to the IEEE with respect to TAIS copyrights or other intellectual property rights that relate to the proposed standard. Any party interested in the license described above may write to the undersigned at the address on the letterhead.

Sincerely,

David J. Harshman  
Assistant General Counsel

## Xircom

October 12, 1995

Mr. Vic Hayes  
Chairperson, IEEE P802.11  
AT&T WCND Utrecht  
Zadelstede 1-10  
3431 JZ Nieuwegein, the Netherlands

Re: Patent Letter of Assurance

Dear Mr. Hayes:

This letter is written in response to your letter dated September 26, 1995 to Mr. Phil Belanger. You have requested, on behalf of the Standards Working Group IEEE P802.11, that Xircom, Inc. confirm to the IEEE that Xircom will provide licenses under applicable United States Patent Pending Serial Number 08/082,313, and any associated divisional applications or patents issued thereunder with respect to the proposed IEEE P802.11 standard.

In the event the proposed standard is adopted and the standard cannot be practiced without the use of the applicable patent(s) (if and when same is/are issued), Xircom agrees as follows. Upon written request, and upon consummation of negotiations (to include receipt by Xircom of appropriate assurances or other satisfactory confirmation of the requester's ability to perform and comply with all terms and conditions of licensing), to grant pursuant to written agreement a nonexclusive license under the applicable patent(s) on a nondiscriminatory basis and on reasonable terms and conditions, including Xircom's then current royalty rates and payment conditions.

This letter does not grant to the IEEE, nor to any other party on any theory of third party beneficiary status, any right in or to Xircom's copyrights or other intellectual property rights (whether current or future) that may relate to the proposed standard. Any party interested in a license as described above may write to Xircom, Inc., Attn: General Counsel, at the address noted above on our letterhead.

Sincerely,

Randall H. Holliday  
General Counsel

Note: Letterhead did not give the address