

10-21-2004

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To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

**1. Name of conveying party(ies)/Execution Date(s):**

(1) Sam Ziquan ZHAO; (2) Reza-ur Rahman KHAN;  
(3) Edward LAW; and (4) Marc PAPAGEORGE

January 30, 2002; January 30, 2002;  
Execution Date(s) March 4, 2002; and February 15, 2002  
Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

**3. Nature of conveyance:**

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other \_\_\_\_\_

**2. Name and address of receiving party(ies)**

Name: Broadcom Corporation

Internal Address: \_\_\_\_\_

Street Address: 16215 Alton Parkway

City: Irvine

State: California

Country: USA Zip: 92618-3616

Additional name(s) & address(es) attached? ☐ Yes ☒ No

**4. Application or patent number(s):**

☒ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

(to be assigned)

Additional numbers attached? ☐ Yes ☒ No

**5. Name and address to whom correspondence concerning document should be mailed:**

Name: Sterne, Kessler, Goldstein & Fox P.L.L.C.

Internal Address: c/o Jeffrey S. Weaver

Street Address: 1100 New York Avenue, N.W.

City: Washington

State: D.C. Zip: 20005-3934

Phone Number: (202) 371-2600

Fax Number: (202) 371-2540

Email Address: \_\_\_\_\_

**6. Total number of applications and patents involved:**

1

**7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00**

- ☒ Authorized to be charged by credit card  
☐ Authorized to be charged to deposit account  
☐ Enclosed  
☐ None required (government interest not affecting title)

**8. Payment Information**

a. Credit Card Last 4 Numbers 1005  
Expiration Date 08/2005

b. Deposit Account Number 19-0036

Authorized User Name SKGE PLLC

**9. Signature:**

Jeffrey S. Weaver

Signature

10-24-04

Date

Jeffrey S. Weaver, Reg. No. 45,608

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 4

Documents to be recorded (including cover sheet) should be faxed to (703) 306-5995, or mailed to:  
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

10/18/2004 DENMANU1 00000029 10963620

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40.00 OP

**PATENT**  
**REEL: 015897 FRAME: 0154**

# ASSIGNMENT

In consideration of the sum of One Dollar (\$1.00) or equivalent and other good and valuable consideration paid to each of the undersigned inventors: 1) Sam Ziqun Zhao 2) Reza-ur Rahman Khan 3) Edward Law and 4) Marc Papageorge, the undersigned inventors hereby sell and assign to Broadcom Corporation (the Assignee) his/her entire right, title and interest, including the right to sue for past infringement and to collect for all past, present and future damages:

*check applicable box(es)*

- ☒ for the United States of America (as defined in 35 U.S.C. § 100),  
☒ and throughout the world,

(a) in the invention known as Thermally and Electrically Enhanced Ball Grid Array Packaging for which application for patent in the United States of America has been executed by the undersigned on 1) 1/30/02, 2) 1/30/02, 3) 3/4/02, and 4) 2/15/02 (also known as United States Application No. 09/997,272, filed November 30, 2001), in any and all applications thereon, in any and all Letters Patents therefor, and

3/20/02

(b) in any and all applications that claim the benefit of the patent application listed above in part (a), including continuing applications, reissues, extensions, renewals and reexaminations of the patent application or Letters Patent therefor listed above in part (a), to the full extent of the term or terms for which Letters Patents issue, and

(c) in any and all inventions described in the patent application listed above in part (a), and in any and all forms of intellectual and industrial property protection derivable from such patent application, and that are derivable from any and all continuing applications, reissues, extensions, renewals and reexaminations of such patent application, including, without limitation, patents, applications, utility models, inventor's certificates, and designs together with the right to file applications therefor; and including the right to claim the same priority rights from any previously filed applications under the International Agreement for the Protection of Industrial Property, or any other international agreement, or the domestic laws of the country in which any such application is filed, as may be applicable;

all such rights, title and interest to be held and enjoyed by the above-named Assignee, its successors, legal representatives and assigns to the same extent as all such rights, title and interest would have been held and enjoyed by the Assignor had this assignment and sale not been made.

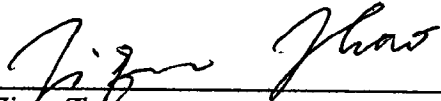
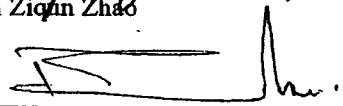
The undersigned inventors agree to execute all papers necessary in connection with the applications and any continuing (continuation, divisional, or continuation-in-part), reissue, reexamination or corresponding applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned inventors agree to execute all papers necessary in connection with any interference or patent enforcement action (judicial or otherwise) related to the applications or any continuing (continuation, divisional, or continuation-in-part), reissue or reexamination applications thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference or patent enforcement action.

The undersigned inventors hereby represent that he/she has full right to convey the entire interest herein assigned, and that he/she has not executed, and will not execute, any agreement in conflict therewith.

The undersigned inventors hereby grant James D. Bennett, Registration No. 37,550, and David J. Rosmann, Registration No. 43,059, of Broadcom Corporation, and Robert Greene Sterne, Esquire, Registration No. 28,912; Edward J. Kessler, Esquire, Registration No. 25,688; Jorge A. Goldstein, Esquire, Registration No. 29,021; David K.S. Cornwell, Esquire, Registration No. 31,944; Robert W. Esmond, Esquire, Registration No. 32,893; Tracy-Gene G. Durkin, Esquire, Registration No. 32,831; Michele A. Cimbala, Esquire, Registration No. 33,851; Michael B. Ray, Esquire, Registration No. 33,997; Robert E. Sokohl, Esquire, Registration No. 36,013; Eric K. Steffe, Esquire, Registration No. 36,688; Michael Q. Lee, Esquire, Registration No. 35,239; Steven R. Ludwig, Esquire, Registration No. 36,203; John M. Covert, Esquire, Registration No. 38,759; Linda E. Alcorn, Esquire, Registration No. 39,588; Lawrence B. Bugaisky, Esquire, Registration No. 35,086; Donald J. Featherstone, Esquire, Registration No. 33,876; and Robert C. Millonig, Esquire, Registration No. 34,395, all of STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C., 1100 New York Avenue, N.W., Suite 600, Washington, D.C. 20005-3934, power to insert in this assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

IN WITNESS WHEREOF, executed by the undersigned inventors on the date opposite his/her name.

|                      |   |
|----------------------|---|
| Date: <u>1/30/02</u> | Signature of Inventor: <u></u><br>Sam Ziqun Zhao       |
| Date: <u>1/30/02</u> | Signature of Inventor: <u></u><br>Reza-ur Rahman Khan |
| Date: _____          | Signature of Inventor: _____<br>Edward Law  |
| Date: _____          | Signature of Inventor: _____<br>Marc Papageorge   |

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Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Sam Ziqun Zhao

Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Reza-ur Rahman Khan

Date: 3/4/02 Signature of Inventor: Edward Law  
Edward Law

Date: 2-15-02 Signature of Inventor: Marc Papageorge  
Marc Papageorge

## ASSIGNMENT

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check applicable box(es)

- ☒ for the United States of America (as defined in 35 U.S.C. § 100),  
☒ and throughout the world,

(a) in the invention known as Thermally and Electrically Enhanced Ball Grid Array Packaging for which application for patent in the United States of America has been executed by the undersigned on 1) 1/30/02, 2) 1/30/02, 3) 3/4/02, and 4) 2/15/02 (also known as United States Application No. 09/997,272, filed November 30, 2001), in any and all applications thereon, in any and all Letters Patents therefor, and

(b) in any and all applications that claim the benefit of the patent application listed above in part (a), including continuing applications, reissues, extensions, renewals and reexaminations of the patent application or Letters Patent therefor listed above in part (a), to the full extent of the term or terms for which Letters Patents issue, and

(c) in any and all inventions described in the patent application listed above in part (a), and in any and all forms of intellectual and industrial property protection derivable from such patent application, and that are derivable from any and all continuing applications, reissues, extensions, renewals and reexaminations of such patent application, including, without limitation, patents, applications, utility models, inventor's certificates, and designs together with the right to file applications therefor; and including the right to claim the same priority rights from any previously filed applications under the International Agreement for the Protection of Industrial Property, or any other international agreement, or the domestic laws of the country in which any such application is filed, as may be applicable;

all such rights, title and interest to be held and enjoyed by the above-named Assignee, its successors, legal representatives and assigns to the same extent as all such rights, title and interest would have been held and enjoyed by the Assignor had this assignment and sale not been made.

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IN WITNESS WHEREOF, executed by the undersigned inventor on \_\_\_\_\_ day of \_\_\_\_\_, 2002, at \_\_\_\_\_, \_\_\_\_\_, and opposite his/her name.

Date: 1/30/02 Signature of Inventor: [Signature]  
Sam Ziqun Zhao

Date: 1/30/02 Signature of Inventor: [Signature]  
Reza-ur Rahman Khan

Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Edward Law

Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Marc Papageorge

Patent No. 09/997,272  
Serial No. 1875 2200001  
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NOT FOR RECORDATION

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Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Sun Ziqun Zhao

Date: \_\_\_\_\_ Signature of Inventor: \_\_\_\_\_  
Reza-ur Rahman Khan

Date: 3/4/02 Signature of Inventor: Edward Law  
Edward Law

Date: 2-15-02 Signature of Inventor: Marc Papageorge  
Marc Papageorge

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PATENT  
REEL: 015897 FRAME: 0160