

PATENT AND TRADEMARK OFFICE

the attached original documents or copy thereof

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

Name: **Broadcom Corporation**

Internal Address:

Street Address: **16215 Alton Parkway**

City: **Irvine** State: **California** Zip: **92618-7013**☐ Change of NameCountry: **United States**

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

832/5
The execution date of the application is: **September 30, 2002**

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

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

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

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

Name: **Bruce E. Garlick**

Internal Address: **Garlick, Harrison & Markison, LLP**

7. Total fee (37 C.F.R. 3.41)\$ 40.00

Street Address: **P.O. Box 160727**

City: **Austin**

State: **TX** Zip: **78716-0727**

■ Enclosed

☐ Authorized to be charged to deposit account

8. Deposit account number:

(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Bruce E. Garlick

October 2, 2002

Name of Person Signing

Signature _____

Date _____

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Total number of pages comprising cover sheet:

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PATENT
REEL: 013365 FRAME: 0520

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ASSIGNMENT for Patent Application

In consideration of the sum of One Dollar (\$1.00) or equivalent and other good and valuable consideration paid to each of the undersigned inventor **Jeyhan Karaoguz and Gottfried Ungerboeck**, the undersigned inventor(s) hereby sell(s) and assign(s) to Broadcom Corporation, a California corporation having a principal place of business at 16215 Alton Parkway, Irvine, California 92618-7013 (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 et seq.),
☒ and throughout the world,

(a) in the invention(s) known as **AN OPTIMAL TRELLIS CODE DESIGN FOR QPSK AND HIGHER ORDER QUADRATURE AMPLITUDE MODULATIONS** for which application(s) for patent in the United States of America has (have) been executed by the undersigned on 9/30, 2002 in any and all applications thereon, in any and all Letters Patent(s) 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.

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

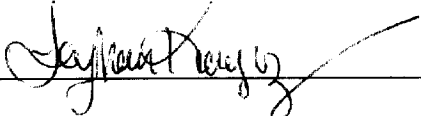
The undersigned inventor(s) agree(s) to execute all papers necessary in connection with any interference or patent enforcement action (judicial or otherwise) related to the application(s) or any continuing (continuation, divisional, or continuation-in-

part), reissue or reexamination application(s) 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 inventor(s) hereby represent(s) 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 inventor(s) hereby grant(s): Bruce E. Garlick, Registration No. 36,520, James A. Harrison, Registration No. 40,401, Timothy W. Markison, Registration No. 33,534, and Shayne X. Short, Registration No. 45,105, and Robert C. Strawbrich, Registration No. 36,692; all of Garlick, Harrison & Markison, LLP, P.O. Box 160727, Austin, Texas 78716-0727, 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 inventor(s) on the date opposite his/her name.

Jeyhan Karaoguz:  Date: 9/30/02

Gottfried Ungerboeck: _____ Date: _____

Atty. Docket No.: BP 2072

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Gottfried Ungerboeck: Gottfried Ungerboeck Date: 30 Sep. 2002

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(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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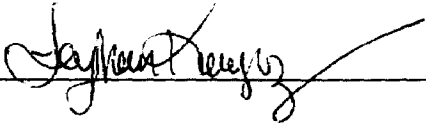
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