

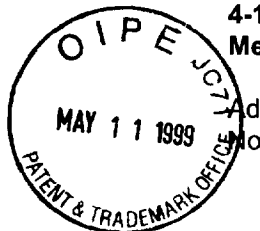
5.11.99 RECORDATION FORM COVER SHEET PATENTS ONLY

Assistant Commissioner for Patents: Please record the attached original document.

1. Name of conveying party(ies): Hiroki KURIBAYASHI and Shogo MIYANABE

2. Name and address of receiving party(ies): Pioneer Electronic Corporation 4-1, Meguro 1-chome Meguro-ku, Tokyo, JAPAN

Additional name(s) attached? [] Yes [x] No



3. Nature of conveyance: [x] Assignment [] Merger [] Security Agreement [] Change of Name [] Other:

Additional names/addresses attached? [] Yes [x] No

05-20-1999



101040846

Execution Date: March 25, 1999

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

If this document is being filed with a new application, the execution date of the application is:

A. Patent Application No.(s): 09/262,352

B. Patent No.(s):

Additional numbers attached? [] Yes [x] No

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

John C. Phillips Fish & Richardson P.C. 601 Thirteenth Street, N.W. Washington, DC 20005

6. Total number of applications/patents involved: 1

7. Total fee (37 CFR 3.41): \$40

[x] Enclosed [] Authorized to charge deposit account

8. Deposit account number: 06-1050

If the fee above is being charged to deposit account, a duplicate copy of this cover sheet is attached. Please apply any additional charges, or any credits, to our Deposit Account No. 06-1050.

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9. Statement and signature: To the best of my knowledge and belief, the foregoing information is true and correct and the attached is the original document.

John C. Phillips Reg. No. 35,322 Name of Person Signing

Signature

May 11, 1999 Date

Total number of pages including cover sheet, attachments, and document: 3

ASSIGNMENT

In consideration of the sum of ten dollars (\$10.00) and other good and valuable consideration paid to each of the undersigned, the undersigned agree to assign, and hereby do assign, transfer, and set over to:

Pioneer Electronic Corporation

having the address:

4-1, Meguro 1-chome, Meguro-ku, Tokyo, Japan

(hereinafter designated as the "ASSIGNEE") the entire right, title, and interest for the United States and all foreign countries (including protection in foreign countries via the Patent Cooperation Treaty), in the invention, and all applications for patent and any Letters Patent which may be granted therefor, the application being known by the Title:

WAVEFORM EQUALIZER AND DATA REPRODUCING APPARATUS USING
THE SAME

for which application for Letters Patent of the United States was executed on even date herewith unless otherwise indicated below:

filed on March 4, 1999,

serial No. 09/262,352

1. The undersigned agree to execute all papers necessary in connection with the application and any continuing or devotional applications thereof and also to execute separate assignments in connection with such applications as the ASSIGNEE may deem necessary or expedient.

2. The undersigned agree to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the ASSIGNEE in every way possible in obtaining evidence and going forward with such interference.

3. The undersigned agree to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial property or similar agreements.

4. The undersigned agree to perform all affirmative acts which may be necessary to obtain a grant of a valid United states patent to the ASSIGNEE.

5. The undersigned hereby authorize and request the commissioner of Patents in the United States and the appropriate national or regional authority in each foreign country to issue any and all Letters Patents resulting from said application or any division or divisions or continuing applications thereof to the said ASSIGNEE, as ASSIGNEE of the entire interest, and hereby covenants that they have full right to convey the entire interest herein assigned, and that they have not executed and will not execute, any agreement in conflict herewith.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned names.

The undersigned hereby authorize the firm of

FISH & RICHARDSON P.C. at the address of
601 Thirteenth Street, N.W., Washington, D.C. 20005, U.S.A.

to insert hereon any further identification necessary or desirable for recordation of this document.

Mar. 25. 1999

Date

Hiroki Kuribayashi

Typed Name: Hiroki KURIBAYASHI

Mar. 25. 1999

Date

Shogo Miyanabe

Typed Name: Shogo MIYANABE