## 502144325 11/29/2012

### PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### CONVEYING PARTY DATA

Name	Execution Date
Shinya Morita	11/06/2012
Koichi Ikeda	11/06/2012
Akira Akiba	11/08/2012
Mitsuo Hashimoto	11/06/2012

#### RECEIVING PARTY DATA

Name:	Sony Corporation
Street Address:	1-7-1 Konan, Minato-ku
City:	Tokyo
State/Country:	JAPAN

### PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13688728

#### CORRESPONDENCE DATA

Fax Number: 3128767934

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 3128767925

Email: patents@snrdenton.com
Correspondent Name: SNR DENTON US LLP
Address Line 1: P.O. BOX 061080

Address Line 4: CHICAGO, ILLINOIS 60606-1080

ATTORNEY DOCKET NUMBER:	09792909-8886
NAME OF SUBMITTER:	David R. Metzger
	This document serves as an Oath/Declaration (37 CFR 1.63).

### Total Attachments: 4

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> PATENT REEL: 029373 FRAME: 0938

OP \$40.00 13688728

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of Invention ELECTRONIC APPARATUS  WAVEGUIDE, INTERPOSER SUBSTRATE INCLUDING THE SAME, MODULE, AND	
As the below named inventor, I hereby declare that:	
This declaration is directed to:  The attached application, or	
United States application or PCT international application number	
filed on	
The above-identified application was made or authorized to be made by me.	
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.  WHEREAS, SONY CORPORATION , with offices at	
1-7-1 KONAN, MINATO-KU, TOKYO, 108-0075, JAPAN (hereinafter referred to as ASSIGNEE), is desirous of	
acquiring all interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar legal protection which may be granted therefor in the United States and in any and all foreign countries;	
NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I by these presents do hereby assign, sell and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, the entire right, title and interest in said invention, said application, including any divisions and continuations thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to any and all priority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and to any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue said United States Letters Patent to said ASSIGNEE, as the assignee of the whole right, title and interest thereto;	
And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its designee, as ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto;	
And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as said ASSIGNEE thereof shall hereafter require and prepare at its own expense;	
And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto;	
And I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment and sale.	
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.	
LEGAL NAME OF INVENTOR	
Inventor: SHINYA MORITA Date: November 6, 2012	
Inventor: SHINYA MORITA  Date: November 6, 20/2  Signature: Shinya Morita	

PATENT REEL: 029373 FRAME: 0939

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of	WAVEGUIDE, INTERPOSER SUBSTRATE INCLUDING THE SAME, MODULE, AND
Invention	ELECTRONIC APPARATUS
As the below	named inventor, I hereby declare that:
This declarati	on
	United States application or PCT international application number
	filed on
The above-ide	entified application was made or authorized to be made by me.
I believe that WHEREAS,	I am the original inventor or an original joint inventor of a claimed invention in the application.  SONY CORPORATION , with offices at
	NAN, MINATO-KU, TOKYO, 108-0075, JAPAN (hereinafter referred to as ASSIGNEE), is desirous of
acquiring all	nterest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar on which may be granted therefor in the United States and in any and all foreign countries;
of which are legal represen in and to any any and all pr Convention R adheres, and t United States	EFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency hereby acknowledged, I by these presents do hereby assign, sell and transfer unto said ASSIGNEE, its successors, assigns, and tatives, the entire right, title and interest in said invention, said application, including any divisions and continuations thereof, and and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to iority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American elating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America or any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue said United States Letters ASSIGNEE, as the assignee of the whole right, title and interest thereto;
designee, as remuneration,	agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of tes and countries foreign thereto;
And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as said ASSIGNEE thereof shall hereafter require and prepare at its own expense;	
And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto;	
And I hereby this assignmen	covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with at and sale.
I hereby acknown not more than	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of five (5) years, or both.
LEGAL NAM	E OF INVENTOR
Inventor:	KOICHI IKEDA Date: November 6, 2012
Signature:	Laichi Ikeda

## DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of Invention	WAVEGUIDE, INTERPOSER SUBSTRATE INCLUDING THE SAME, MODULE, AND ELECTRONIC APPARATUS
As the below	named inventor, I hereby declare that:
This declarati	X The attached amplication or
	United States application or PCT international application number filed on
The above-ide	entified application was made or authorized to be made by me.
WHEREAS,	I am the original inventor or an original joint inventor of a claimed invention in the application.  SONY CORPORATION , with offices at
acquiring all i	NAN, MINATO-KU, TOKYO, 108-0075, JAPAN (hereinafter referred to as ASSIGNEE), is desirous of interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar on which may be granted therefor in the United States and in any and all foreign countries;
of which are legal represen in and to any any and all pr Convention R adheres, and t United States	EFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency hereby acknowledged, I by these presents do hereby assign, sell and transfer unto said ASSIGNEE, its successors, assigns, and tatives, the entire right, title and interest in said invention, said application, including any divisions and continuations thereof, and and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to iority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American elating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America o any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue said United States Letters ASSIGNEE, as the assignee of the whole right, title and interest thereto;
And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its designee, as ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto;	
application fo	agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for roreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters may be granted for my aforesaid invention, as said ASSIGNEE thereof shall hereafter require and prepare at its own expense;
And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto;	
And I hereby this assignmen	covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with at and sale.
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of five (5) years, or both.
LEGAL NAM	E OF INVENTOR
Inventor:	AKIRA AKIBA Date: November 8, 2012
Signature:	Akira Alaba

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of Invention	WAVEGUIDE, INTERPOSER SUBSTRATE INCLUDING THE SAME, MODULE, AND ELECTRONIC APPARATUS
As the below	named inventor, I hereby declare that:
This declaration is directed to:	X The attached application or
	United States application or PCT international application number
	filed on
The above-ide	entified application was made or authorized to be made by me.
I believe that I WHEREAS,	I am the original inventor or an original joint inventor of a claimed invention in the application.  SONY CORPORATION , with offices at
	DNAN, MINATO-KU, TOKYO, 108-0075, JAPAN (hereinafter referred to as ASSIGNEE), is desirous of
acquiring all i	interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar on which may be granted therefor in the United States and in any and all foreign countries;
of which are I legal represen in and to any any and all pr Convention R adheres, and t United States Patent to said	EFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency hereby acknowledged, I by these presents do hereby assign, sell and transfer unto said ASSIGNEE, its successors, assigns, and natatives, the entire right, title and interest in said invention, said application, including any divisions and continuations thereof, and and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to riority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America to any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue said United States Letters I ASSIGNEE, as the assignee of the whole right, title and interest thereto;
And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its designee, as ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto;	
And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as said ASSIGNEE thereof shall hereafter require and prepare at its own expense;	
And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto;	
And I hereby of this assignment	covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with nt and sale.
	nowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of a five (5) years, or both.
LEGAL NAM	ME OF INVENTOR
Inventor:	MITSUO HASHIMOTO Date: November 6, 20/2
Signature:	mitouro Hashimoto

**RECORDED: 11/29/2012** 

PATENT REEL: 029373 FRAME: 0942