10/23/2017 504606927

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4653640

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KENYA SUZUKI	09/12/2017
KEI KUWABARA	09/12/2017
YUICHI HIGUCHI	09/12/2017
MITSUMASA NAKAJIMA	09/12/2017
YUICHIRO IKUMA	09/12/2017
OSAMU MORIWAKI	09/12/2017
TETSUO TAKAHASHI	09/12/2017
NAOKI OOBA	09/12/2017
YUZO ISHII	09/12/2017

RECEIVING PARTY DATA

Name:	NIPPON TELEGRAPH AND TELEPHONE CORPORATION
Street Address:	5-1, OTEMACHI 1-CHOME
Internal Address:	CHIYODA-KU
City:	TOKYO
State/Country:	JAPAN
Postal Code:	1008116

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15568755

CORRESPONDENCE DATA

Fax Number: (801)328-1707

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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ATTORNEY DOCKET NUMBER: 14321.221

REEL: 043927 FRAME: 0336 504606927

PAIENI

NAME OF SUBMITTER:	DANA L. TANGREN, REG. NO. 37246
SIGNATURE:	/DANA L. TANGREN 37246/
DATE SIGNED:	10/23/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).
Total Attachments: 12	1
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PATENT REEL: 043927 FRAME: 0337

UNITED STA	
	COMBINED DECLARATION and ASSIGNMENT (Utility, Design, National Stage of PCT)
	NVENTION: ²
	OPTICAL SIGNAL PROCESSING DEVICE
As a below na	imed inventor, I hereby declare that:
	SPECIFICATION IDENTIFICATION
This declaration	on and assignment is directed to:
	(complete (a), (b), or (c)) 3
(a) []	The attached application (United States Application No.
	filed on
(b) []	Previously filed United States Application No.
	filed on; or
(c) [X]	PCT International Application No. PCT/JP2016/002242,
(-) []	filed on April 28, 2016 (nationalized as United States Application
	No. 15/568610
I hereby author	orize the patent attorneys and/or patent agents of Workman Nydegger to insert the
above Applica	ation No(s). and filing date(s) when known.
	DECLARATION AND ACKNOWLEDGEMENT
The above-ide	entified application was made or authorized to be made by me.
	I am the original inventor or an original joint inventor of a claimed invention in the ed application.
	te that I have reviewed and understand the contents of the above-identified
application, in	soluding the claim(s).

I acknowledge the duty to disclose all information which is material to patentability as defined in 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

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.

ASSIGNMENT⁴

The Assignee, <u>NIPPON TELEGRAPH AND TELEPHONE CORPORATION</u>, having a principal place of business at <u>5-1</u>, <u>Otemachi 1-chome</u>, <u>Chiyoda-ku</u>, <u>Tokyo 1008116 Japan</u>, desires to secure the entire right, title and interest in the above-identified application.

In consideration of One Dollar (\$1.00) and other good and valuable consideration paid to me by the Assignee, the receipt and sufficiency of which is hereby acknowledge, I HEREBY ASSIGN TO THE ASSIGNEE:

The entire right, title and interest in the above-identified application and in all divisions, continuations and continuations-in-part of said application and in all patents issuing thereon in the United States and in all reissues or extensions of patents granted thereon.

The right to claim priority to or the benefit of any prior related United States or foreign patent applications including under all applicable treaties and conventions.

I hereby authorize and request the United States Commissioner of Patents and Trademarks, to issue any and all patents on said application to the Assignee as the owner of the entire interest, for the sole use and behoof of the said Assignee, its successors, assigns and legal representatives.

I hereby agree, without further consideration, to sign all lawful papers and to perform all other lawful acts which the Assignee may request me to make this Assignment fully effective, including, by way of example but not of limitation, the following:

Prompt execution of all original, divisional, continuation, continuation-in-part, substitute, reissue, and other United States applications and all lawful documents requested by the Assignee to further the prosecution of any of such patent applications.

2

With regard to the above-identified application and applications claiming priority thereto, cooperate to the best of my ability in: (1) proceedings relating to nullification, reissue, extension, post grant, inter parties, derivation, supplemental examination, and infringement; (2) execution of all lawful documents; and (3) the production of evidence.

This assignment and agreement shall be binding upon my heirs and legal representatives.

SIGNATURE(S)5

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or f	irst inventor		
Kenya			SUZUĶI
(GIVEN NAME)		(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature	Keny	1a Shzulet	
Date September 12	2, 2017	Country of Citizenship	Japan
Residence A	Atsugi-shi		Japan
	(city)		(State or Country)
Mailing Address	c/o NTT Inte	ellectual Property Center,	
Full name of second j	aint inventar	ifany	
Kei	O1110 1114 O11601,	ii wiiy	KUWABARA
(GIVEN NAME)		(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature	K F	Kei Kunabara	

Date <u>September 12</u>	, 2017	Country of Citizenship	Japan
		Country of Citizenship	Japan Japan
Date <u>September 12</u> Residence			
Residence	Atsugi-shi (city)		Japan (State or Country)

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Y. 4. 115	HIGUCHI FAMILY (OR LAST NAME)
Inventor's signature Twichi Hig	hoh i
Date September 12, 2017 Country	of Citizenship <u>Japan</u>
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Full name of fourth joint inventor, if any	
Mitsumasa (GIVEN NAME) (MIDDLE INI	NAKAJIMA
and the second s	
Inventor's signature M71814464 Ma	kojika
Date September 12, 2017 Country	of Citizenship Japan
Residence Atsugi-shi	Japan
(city)	(State or Country)
Mailing Address <u>c/o NTT Intellectual Pro</u> r	erty Center.
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Full name of fifth joint inventor, if any	
Yuichiro	IKUMA
(GIVEN NAME) (MIDDLE INI	TIAL OR NAME) FAMILY (OR LAST NAME)
Inventor's signature	Yung
Date September 12, 2017 Country	of Citizenship <u>Japan</u>
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Mailing Address <u>c/o NTT Intellectual Prog</u>	erty Center,

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MORIWAKI FAMILY (OR LAST NAME)
FAMILY (OR LAST NAME)
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(State or Country)
i, Tokyo 1808585 Japan
TAKAHASHI FAMILY (OR LAST NAME)
Japan
·
Japan (State or Country)
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i, Tokyo 1808585 Japan OOBA FAMILY (OR LAST NAME) Japan Japan
i, Tokyo 1808585 Japan OOBA FAMILY (OR LAST NAME) Japan
i, Tokyo 1808585 Japan OOBA FAMILY (OR LAST NAME) Japan Japan
OOBA FAMILY (OR LAST NAME) Japan Japan (State or Country)

5

Full name of ninth joint inventor, if any

PAT

Yuzo		ISHII
(GIVEN NAME)	(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature		
Date September 12, 2017	Country of Citizenship	Japan
Residence Yokohama-	shi	Japan
(city)		(State or Country)
Mailing Address <u>c/o NTT</u>	ELECTRONICS CORPORATION	J
1-32, Sh	<u>in-urashimacho 1-chome, Kanagay</u>	/a-ku, Yokohama-shi,
Kanagay	va 2210031 Japan	

UNITED ST Form Foreign	TATES PATENT ¹ Attorney Docket N	O
	COMBINED DECLARATION and ASSIGNMENT (Utility, Design, National Stage of PCT)	
	INVENTION: ²	
	OPTICAL SIGNAL PROCESSING DEVICE	
As a below na	named inventor, I hereby declare that:	
	SPECIFICATION IDENTIFICATION	
This declarati	tion and assignment is directed to:	
	(complete (a), (b), or (c)) 3	
(a) []	The attached application (United States Application No);	
(b) []	Previously filed United States Application No; or	?
(c) [X]	PCT International Application No. <u>PCT/JP2016/002242</u> , filed on <u>April 28, 2016</u> (nationalized as United States Application No, filed on	
+1 -	horize the patent attorneys and/or patent agents of Workman Nyde cation No(s). and filing date(s) when known.	gger to insert the
	DECLARATION AND ACKNOWLEDGEMENT	
The above-ide	dentified application was made or authorized to be made by me,	
	t I am the original inventor or an original joint inventor of a claimed fied application.	I invention in the
I hereby stat	ate that I have reviewed and understand the contents of the	above-identified

application, including the claim(s).

I acknowledge the duty to disclose all information which is material to patentability as defined in 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

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.

ASSIGNMENT4

The Assignee, <u>NIPPON TELEGRAPH AND TELEPHONE CORPORATION</u>, having a principal place of business at <u>5-1</u>, <u>Otemachi 1-chome</u>, <u>Chiyoda-ku</u>, <u>Tokyo 1008116 Japan</u>, desires to secure the entire right, title and interest in the above-identified application.

In consideration of One Dollar (\$1.00) and other good and valuable consideration paid to me by the Assignee, the receipt and sufficiency of which is hereby acknowledge, I HEREBY ASSIGN TO THE ASSIGNEE:

The entire right, title and interest in the above-identified application and in all divisions, continuations and continuations-in-part of said application and in all patents issuing thereon in the United States and in all reissues or extensions of patents granted thereon.

The right to claim priority to or the benefit of any prior related United States or foreign patent applications including under all applicable treaties and conventions.

I hereby authorize and request the United States Commissioner of Patents and Trademarks, to issue any and all patents on said application to the Assignee as the owner of the entire interest, for the sole use and behoof of the said Assignee, its successors, assigns and legal representatives.

I hereby agree, without further consideration, to sign all lawful papers and to perform all other lawful acts which the Assignee may request me to make this Assignment fully effective, including, by way of example but not of limitation, the following:

Prompt execution of all original, divisional, continuation, continuation-in-part, substitute, reissue, and other United States applications and all lawful documents requested by the Assignee to further the prosecution of any of such patent applications.

2

PATENT REEL: 043927 FRAME: 0345 With regard to the above-identified application and applications claiming priority thereto, cooperate to the best of my ability in: (1) proceedings relating to nullification, reissue, extension, post grant, inter parties, derivation, supplemental examination, and infringement; (2) execution of all lawful documents; and (3) the production of evidence.

This assignment and agreement shall be binding upon my heirs and legal representatives.

SIGNATURE(S)5

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Vanna		
Kenya		SUZUKI
(GIVEN NAME)	(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME,
inventor's signature		
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Mailing Address <u>c/o N1</u>	T Intellectual Property Center,	
9_11 7	Midori-cho 3-chome, Musashino-shi,	Tokvo 1808585 Japan
Full name of second joint in	ventor if any	
~	ventor, if any	LT INN A D A D A
Full name of second joint inv Kei	•	KUWABARA
Kei (GIVEN NAME)	ventor, if any (MIDDLE INITIAL OR NAME)	KUWABARA FAMILY (OR LAST NAME,
Kei (GIVEN NAME)	•	***************************************
Kei (GIVEN NAME) Inventor's signature	•	FAMILY (OR LAST NAME,
Kei (GIVEN NAME) Inventor's signature Date	(MIDDLE INITIAL OR NAME) Country of Citizenship	FAMILY (OR LAST NAME, Japan Japan
Kei (GIVEN NAME) Inventor's signature	(MIDDLE INITIAL OR NAME) Country of Citizenship	FAMILY (OR LAST NAME,
Kei (GIVEN NAME) Inventor's signature Date Residence (city)	(MIDDLE INITIAL OR NAME) Country of Citizenship	FAMILY (OR LAST NAME, Japan Japan (State or Country)

Full name of third jo	oint inventor, if any	
Yuichi (GIVEN NAME)	(MIDDLE INITIAL OR NAME)	HIGUCHI FAMILY (OR LAST NAME)
Inventor's signature		
Date	Country of Citizenship	Japan
Residence	Atsugi-shi	
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Mailing Address	c/o NTT Intellectual Property Center.	
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Full name of fourth j Mitsumasa (GIVEN NAME)	(MIDDLE INITIAL OR NAME)	
	Country of Citizenship	Japan
Residence	<u>Atsugi-shi</u>	Japan
14 o' "5" 4 N N	(city)	(State or Country)
	c/o NTT Intellectual Property Center.	
	9-11, Midori-cho 3-chome, Musashino	-sni, Tokyo 1808585 Japan
Full name of fifth jo	•	
Yuichiro (GIVEN NAME)	(MIDDLE INITIAL OR NAME)	IKUMA FAMILY (OR LAST NAME)
Inventor's signature		
Date	Country of Citizenship	Japan
Residence	Atsugi-shi	Japan
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Mailing Address	c/o NTT Intellectual Property Center	

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Full name of sixth jo	oint inventor, if any	y	
Osamu	<u> </u>	MIDDLE INITIAL OR NAME)	MORIWAKI
(GIVEN NAME)	(A	AIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature	· · · · · · · · · · · · · · · · · · ·		
Date		Country of Citizenship	Japan
Residence	Atsugi-shi		Japan
	(city)		(State or Country)
Mailing Address	c/o NTT Intellec	ctual Property Center,	
	9-11, Midori-ch	o 3-chome, Musashino-sh	i, Tokyo 1808585 Japan
Full name of sevent Tetsuo (GIVEN NAME)	•	any MIDDLE INITIAL OR NAME)	TAKAHASHI FAMILY (OR LAST NAME)
forantore ciomatarea			
		Country of Citizenship	
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Mailing Address	c/o NTT Intelle	ctual Property Center.	
		o 3-chome, Musashino-sh	
Full name of eighth	joint inventor, if a	my	
Naoki (GIVEN NAME)	/3	MIDDLE INITIAL OR NAME)	OOBA FAMILY (OR LAST NAME)
Inventor's signature		Orto	TAMEN (ON LABIT TOTAL)
No.		Country of Citizenship	Japan
€.	okohama-shi	,	Japan
	(city)		(State or Country)
	a/a NITT ELEC	TRONICS CORPORATIO	DN,
Mailing Address	U/U IN I I LILLIU		
Mailing Address		himacho 1-chome, Kanaga	ıwa-ku. Yokohama-shi.

Full name of ninth joint inventor, if any

5

Yuzo	ISHII
(GIVEN NAME) (MIDDLE INTI	TAL OR NAME) FAMILY (OR LAST NAME)
Inventor's signature	
Date April 28, 2017 Country	of Citizenship <u>Japan</u>
Residence Yokohama-shi	Japan
(city)	(State or Country)
Mailing Address <u>c/o NTT ELECTRONICS</u>	CORPORATION.
1-32, Shin-urashimacho 1	-chome, Kanagawa-ku, Yokohama-shi,
Kanagawa 2210031 Japar	1