### 504450173 07/11/2017

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4496874

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
YUKI MAEGAWA	04/07/2017
HIDEKI UEDA	04/05/2017
HIDEAKI FUJIURA	04/07/2017
TAKESHI UEMURA	04/04/2017
HIROSHI NAKATSUKA	04/04/2017
TSUYOSHI SAKAUE	04/06/2017
RIE OKAMOTO	04/04/2017
SHOYA KIDA	04/06/2017

#### **RECEIVING PARTY DATA**

Name:	ne: PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD.	
Street Address:	1-61, SHIROMI 2-CHOME, CHUO-KU, OSAKA-SHI	
City:	OSAKA	
State/Country:	JAPAN	
Postal Code:	540-6207	

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15526333

#### **CORRESPONDENCE DATA**

Fax Number:

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.

**Email:** ppc.docket@ml.jp.panasonic.com

Correspondent Name: PANASONIC IP MANAGEMENT CO., LTD.

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Address Line 4: OSAKA, JAPAN 540-6207

ATTORNEY DOCKET NUMBER:	P0625552US01
NAME OF SUBMITTER:	HIROO MAEDA
SIGNATURE:	/Hiron MAEDA/

PATENT 504450173 REEL: 042957 FRAME: 0131

DATE SIGNED:	07/11/2017	
Total Attachments: 6		
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PATENT REEL: 042957 FRAME: 0132

	Assignment Form (Oct. 2014)
Panasonic Ref*: P0625552US01	Application Serial No. 15/526333
Japan Firm Name: PIPM Direct	Japan Firm Ref:
US Firm Name*:	US Firm Ref:
(* must be filled)	

#### **ASSIGNMENT**

ng U.S. patent application (check onl	y one box below)
by the undersigned concurre	ently herewith, or
on the following date(s):	, or
the Declaration was signed before this Assigna	nent, enter the date(s) on which you signed the Declaration)
PCT Application No.	PCT/JP2016/000067 and
ation after filing U.S. patent application	on
Application Filing Date	and,
	by the undersigned concurred on the following date(s):  the Declaration was signed before this Assignment of the PCT Application No.

WHEREAS, Panasonic Intellectual Property Management Co., Ltd. of 1-61, Shiromi 2-chome, Chuo-ku, Osaka-shi, Osaka 540-6207

Japan,\_

its/their heirs, successors, legal representatives and assigns (hereinafter designated as "Assignee(s)") is/are desirous of acquiring the entire right, title, and interest in and to said invention and in and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and intended to be legally bound hereby, the undersigned, by these presents, does sell, assign and transfer unto said Assignee(s) the entire and exclusive right, title and interest in and to; (i) said invention in the United States of America, its territories, dependencies and possessions (hereinafter designated as the United States) and in all countries foreign to the United States; and (ii) this patent application and any and all related patent application(s) disclosing said invention, including provisionals, non-provisionals, conversions, divisions, continuations, continuations-in-part and reissues thereof in the United States and all countries foreign to the United States (hereinafter designated as "Related Applications"), along with all rights of priority created by this patent application under any treaty relating thereto; and (iii) any and all Letters Patent(s), including all renewals, extensions, reissues and reexamination certificates which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States for the full term or terms thereof.

The undersigned agree(s) to execute all papers necessary in connection with this application and any and all Related Applications thereof, 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, all papers necessary in connection with any interference which may be declared concerning this application or any and all Related Applications thereof and to cooperate with the Assignee(s) in every way possible in obtaining and producing evidence and proceeding with such interference, and for any and all litigations regarding, or for the purpose of protecting the right, title and interest in and to sald invention, this application and any and all Related Applications or Letters Patent(s) therefore, and to testify in any legal proceeding relating thereto and in support thereof, for the benefit of Assignee(s), and also to execute separate assignments in connection with such applications as the Assignee(s) may deem necessary or expedient.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States and any foreign patent(s) to the Assignee(s) and to vest all rights hereby conveyed to the Assignee(s) as fully and entirely as the same would have been held by the undersigned if this Assignment had not been made.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents, and officials of all foreign countries, whose duty is to issue patents, to issue any and all Letters Patent(s) resulting from said application or any and all Related Applications thereof to said Assignee(s) and hereby covenants that the undersigned has (have) full right to convey the entire interest herein assigned, and that the undersigned has (have) not executed, and will not execute, any assignment, sale, agreement or encumbrances in conflict herewith.

The undersigned hereby does sell, assign and transfer unto said Assignee(s) the full and exclusive authority for revoking power of attorney(s) executed by the undersigned in connection with this application and for appointing a new power of attorney in place thereof.

The undersigned hereby grant(s) the Assignee(s) and the appointed U.S. patent attorneys and agents the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent Office for recordation of this

The undersigned hereby agree(s) that the above obligations shall apply to the undersigned both individually and collectively.

The undersigned hereby agree(s) that this Assignment shall be construed in accordance with the law of the appropriate jurisdiction within the United States.

IN WITNESS WHEREOF, executed by the undersigned on the date(s) following the undersigned name(s) and signature(s).

Box2	(Each Inventor, please Sign and Date beld	ow)	
	(e) First Name, Last Name	(f) Signature	(g) Date signed
(1)	Yuki MAEGAWA	Yuki Magjua	Month, Date, Year April 7, 2017
(2)	Hideki UEDA		Month, Date, Year
(3)	Hideaki FUJIURA	Hideaki Frijiwa	Month, Date, Year  April 7, 2017
(4)	Takeshi UEMURA		Month, Date, Year

■Check if additional paper(s) is/are attached. Total of \_\_\_\_\_ pages are submitted.

Panasonic Ref\*: P0625552US01

## **ASSIGNMENT (Cont.)**

15/526333

Additional Inventors:
-----------------------

	Continued)  (e) First Name, Last Name	(f) Signature	(a) Date signed
-	(O) I HOLINGHIE, LASEINAME		(g) Date signed
(5)	·Hiroshi NAKATSUKA	Hiroshi hakatsuka	April 4, 2017
(6)	Tsuyoshi SAKAUE	Hiroshi hakatsuka Tsuyashi Xakane	Month, Date, Year April, 6, 2017
(7)	Rie OKAMOTO	Rie Okamoto	Month, Date, Year April 4.2017
(8)	Shoya KIDA	shoya (coda.	April 6, 2017.
(9)			Month, Date, Year
(10)			Month, Date, Year
(11)			Month, Date, Year
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(15)			Month, Date, Year
(16)			Month, Date, Year
(17)			Month, Dale, Year
(18)			Month, Dale, Year
(19)			Month, Date, Year
20)			Month, Date, Year
21)			Month, Date, Year
22)			Month, Date, Year

 $\Box$ Check if additional paper(s) is/are attached. Total of  $\underline{\phantom{a}}$  pages are submitted.

PATENT REEL: 042957 FRAME: 0134

Panasonic Ref*: P0625552US01	Application Serial No. 15 / 5 2 6 3 3 3
Japan Firm Name: PIPM Direct	Japan Firm Ref:
US Firm Name*:	US Firm Ref:
(* must be filled)	

#### **ASSIGNMENT**

WHEREAS, the undersigned has (have) invented the invention entitled:			
Box 1			
Title of Invention:			
SENSOR			
1. For use when signing Declaration prior to filin	g U.S. patent application (check or	lly one box below)	
(a) for which an application for U.S. patent has been executed	by the undersigned concur	rently herewith, or	
(b) for which an application for U.S. patent has been executed on the following date(s):, or			
(if Declaration & Assignment are signed on the same day, check (a) and make no entry in the blank; if the Declaration was signed before this Assignment, enter the date(s) on which you signed the Declaration)			
(c)∎ for which an International Application has been filed as:	PCT Application No.	PCT/JP2016/000067 and	
(for the PCT-US national entry, check only (c) and enter PCT application number in the right)		FC1/3F2010/000001 and	
2. For use when signing Declaration after filing U.S. patent application			
(d)□ for which an application for U.S. patent has been filed on:	Application Filing Date	and,	

WHEREAS, Panasonic Intellectual Property Management Co., Ltd. of 1-61, Shiromi 2-chome, Chuo-ku, Osaka-shi, Osaka 540-6207

Japan,

its/their heirs, successors, legal representatives and assigns (hereinafter designated as "Assignee(s)") is/are desirous of acquiring the entire right, title, and interest in and to said invention and in and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and intended to be legally bound hereby, the undersigned, by these presents, does sell, assign and transfer unto said Assignee(s) the entire and exclusive right, title and interest in and to; (i) said invention in the United States of America, its territories, dependencies and possessions (hereinafter designated as the United States) and in all countries foreign to the United States; and (ii) this patent application and any and all related patent application(s) disclosing said invention, including provisionals, non-provisionals, conversions, divisions, continuations, continuations-in-part and reissues thereof in the United States and all countries foreign to the United States (hereinafter designated as "Related Applications"), along with all rights of priority created by this patent application under any treaty relating thereto; and (iii) any and all Letters Patent(s), including all renewals, extensions, reissues and reexamination certificates which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States for the full term or terms thereof.

The undersigned agree(s) to execute all papers necessary in connection with this application and any and all Related Applications thereof, 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, all papers necessary in connection with any interference which may be declared concerning this application or any and all Related Applications thereof and to cooperate with the Assignee(s) in every way possible in obtaining and producing evidence and proceeding with such interference, and for any and all litigations regarding, or for the purpose of protecting the right, title and interest in and to said invention, this application and any and all Related Applications or Letters Patent(s) therefore, and to testify in any legal proceeding relating thereto and in support thereof, for the benefit of Assignee(s), and also to execute separate assignments in connection with such applications as the Assignee(s) may deem necessary or expedient.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States and any foreign patent(s) to the Assignee(s) and to vest all rights hereby conveyed to the Assignee(s) as fully and entirely as the same would have been held by the undersigned if this Assignment had not been made.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents, and officials of all foreign countries, whose duty is to issue patents, to issue any and all Letters Patent(s) resulting from said application or any and all Related Applications thereof to said Assignee(s) and hereby covenants that the undersigned has (have) full right to convey the entire interest herein assigned, and that the undersigned has (have) not executed, and will not execute, any assignment, sale, agreement or encumbrances in conflict herewith.

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The undersigned hereby agree(s) that the above obligations shall apply to the undersigned both individually and collectively.

The undersigned hereby agree(s) that this Assignment shall be construed in accordance with the law of the appropriate jurisdiction within the United States.

IN WITNESS WHEREOF, executed by the undersigned on the date(s) following the undersigned name(s) and signature(s).

Box2	(Each Inventor, please Sign and Date below)			
-	(e) First Name, Last Name	(f) Signature	(g) Date signed	
(1)	Yuki MAEGAWA		Month, Date, Year	
(2)	Hideki UEDA	Hideki Weda	Apr, 5,2017	
(3)	Hideaki FUJIURA		Month, Date, Year	
(4)	Takeshi UEMURA		Month, Date, Year	

■ Check if additional paper(s) is/are attached. Total of \_\_\_\_ pages are submitted.

Panasonic Ref\*: P0625552US01

# **ASSIGNMENT (Cont.)**

15/526333

#### Additional Inventors:

1	Continued)	(f) Signatura	(a) Data signed
-	(e) First Name, Last Name	(f) Signature	(g) Date signed
(5)	Hiroshi NAKATSUKA		Month, Date, Year
(6)	Tsuyoshi SAKAUE		Month, Date, Year
(7)	Rie OKAMOTO		Month, Date, Year
(8)	Shoya KIDA		Month, Date, Year
(9)			Month, Date, Year
10)			Month, Date, Year
11)			Month, Date, Year
12)			Month, Date, Year
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(19)			Month, Date, Year
(20)			Month, Date, Year
(21)			Month, Date, Year
(22)			Month, Date, Year

 $\Box$ Check if additional paper(s) is/are attached. Total of  $\underline{\phantom{a}}$  pages are submitted.

PATENT REEL: 042957 FRAME: 0136

Japan	sonic Ref*: P0625552US01 Firm Name: PIPM Direct rm Name*:		Application Serial No	Assignment Form (Oct. 2014) 526333
(* must i	be filled)			
		ASSIG	SNMENT	
WHER	EAS, the undersigned has (have) invented	the invention entitled:		
Box 1		the invention challed.		
	f Invention: NSOR			
	1. For use when signin	ng Declaration prior to filin	g U.S. patent application (check only one box be	low)
(a)□ fo	or which an application for U.S. patent			
(b)□ fo	or which an application for U.S. patent	has been executed	on the following date(s):	, or
(if Decl	aration & Assignment are signed on the same day, check (a) an	d make no entry in the blank; if t	he Declaration was signed before this Assignment, enter the d	
(c)≡ fo	or which an International Application ha e PCT-US rational entry, check only (c) and enter PCT applica	as been filed as:	PCT Application No.	PCT/JP2016/000067 and
	2. For t	ise when signing Declara	tion after filing U.S. patent application	
(d)□ fo	or which an application for U.S. patent	,	Application Filing Date	and,
Japan,	WHEREAS, Panasonic Intellectual Pr	operty Management	Co., Ltd. of 1-61, Shiromi 2-chome, Chuo-	ku, Osaka-shi, Osaka 540-6207
legally bound hereby, the undersigned, by these presents, does sell, assign and transfer unto said Assignee(s) the entire and exclusive right, title and interest in and to; (i) said invention in the United States of America, its territories, dependencies and possessions (hereinafter designated as the United States) and in all countries foreign to the United States; and (ii) this patent application and any and all related patent applications gaid invention, including provisionals, non-provisionals, conversions, divisions, continuations, continuations-in-part and reissues thereof in the United States and all countries foreign to the United States (hereinafter designated as "Related Applications-in-part and reissues thereof in the United States and all countries foreign to the United States (hereinafter designated as "Related Applications,"), along with all rights of priority created by this patent application under any treaty relating thereto; and (iii) any and all Letters Patent(s), including all renewals, extensions, reissues and reexamination certificates which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States for the full term or terms thereof.  The undersigned agree(s) to execute all papers necessary in connection with claims or provisions of the international Convention for Protection of Industrial Property or similar agreements, all papers necessary in connection with any interference which may be declared concerning this application or any and all Related Applications thereof and to cooperate with the Assignee(s) in every way possible in obtaining and producing evidence and proceeding with such interference, and for any and all itigations regarding, or for the purpose of protecting the right, title and interest in and to said invention, this application and any and all Related Applications to Letters Patent(s) therefore, and to testify in any legal proceeding relating thereto and in support th				
Box2	N WITNESS WHEREOF, executed by the u (Each Inventor, please Sign and Date be	low)		a signature(s).
	(e) First Name, Last Name		(f) Signature	(g) Date signed  Month, Date, Year
(1)	Yuki MAEGAWA			mona, paid, red

■Check if additional paper(s) is/are attached. Total of 2 pages are submitted.

Hideki UEDA

Hideaki FUJIURA

Takeshi UEMURA

(2)

(3)

(4)

PATENT REEL: 042957 FRAME: 0137

Month, Date, Year

Month, Date, Year

Panasonic Ref\*: P0625552US01

# **ASSIGNMENT (Cont.)**

15/526333

Additional	Inventore	
Additional	mventors:	

	(Continued)		
	(e) First Name, Last Name	(f) Signature	(g) Date signed
(5)	Hiroshi NAKATSUKA		Month, Date, Year
(6)	Tsuyoshi SAKAUE		Month, Date, Year
(7)	Rie OKAMOTO		Month, Date, Year
(8)	Shoya KIDA		Month, Date, Year
(9)			Month, Date, Year
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(19)			Month, Date, Year
(20)			Month, Date, Year
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 $\Box$ Check if additional paper(s) is/are attached. Total of  $\underline{\phantom{a}2\phantom{a}}$  pages are submitted.

PATENT REEL: 042957 FRAME: 0138

**RECORDED: 07/11/2017**