

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5972285

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

## CONVEYING PARTY DATA

Name	Execution Date
AI-ICHIRO SASAKI	01/27/2020
JUNICHI KODATE	01/27/2020
JUMPEI FUKE	12/16/2019
HIROKI OKADA	12/16/2019
HIROKO OKUYAMA	12/11/2019

## RECEIVING PARTY DATA

<b>Name:</b>	NIPPON TELEGRAPH AND TELEPHONE CORPORATION
<b>Street Address:</b>	5-1, OTEMACHI 1-CHOME
<b>Internal Address:</b>	CHIYODA-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	1008116
<b>Name:</b>	TOYOTA JIDOSHA KABUSHIKI KAISHA
<b>Street Address:</b>	1, TOYOTA-CHO
<b>Internal Address:</b>	TOYOTA-SHI
<b>City:</b>	AICHI
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	4718571

## PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16640385

## CORRESPONDENCE DATA

Fax Number: (404)541-3111

*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.*

Phone: 4048156500

Email: landrew@kilpatricktownsend.com

Correspondent Name: KILPATRICK TOWNSEND &amp; STOCKTON LLP

Address Line 1: 1100 PEACHTREE STREET

Address Line 2: SUITE 2800

PATENT

<b>Address Line 4:</b>	ATLANTA, GEORGIA 30309
<b>ATTORNEY DOCKET NUMBER:</b>	044471/1160183
<b>NAME OF SUBMITTER:</b>	LESLEY L. ANDREW
<b>SIGNATURE:</b>	/Lesley L. Andrew/
<b>DATE SIGNED:</b>	02/20/2020
<b>Total Attachments: 9</b> source=1160183_Assignment#page1.tif source=1160183_Assignment#page2.tif source=1160183_Assignment#page3.tif source=1160183_Assignment#page4.tif source=1160183_Assignment#page5.tif source=1160183_Assignment#page6.tif source=1160183_Assignment#page7.tif source=1160183_Assignment#page8.tif source=1160183_Assignment#page9.tif	

---

**ASSIGNMENT**

---

We, the undersigned, have invented certain inventions and improvements disclosed in a utility (provisional or non-provisional) or design patent application entitled

“DUAL LOOP ANTENNA,”

which was filed with the U.S. Patent and Trademark Office on February 20, 2020, and assigned application no. 16/640,385;

For one dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which we acknowledge, we:

1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to **Nippon Telegraph and Telephone Corporation**, a company organized and existing under the laws of Japan having a principal place of business at 5-1, Otemachi 1-chome, Chiyoda-ku, Tokyo JAPAN 1008116 and **Toyota Jidosha Kabushiki Kaisha**, a company organized and existing under the laws of Japan having a principal place of business at 1, Toyota-cho, Toyota-shi, Aichi JAPAN 4718571 (hereinafter referred to as “Assignees”), the entire right, title, and interest in and to:
  - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
  - (b) the above-referenced patent application, and all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
  - (c) the right to claim priority to the above-referenced patent application, and any and all applications referenced in subsection (b); and
  - (d) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this

paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and

- (e) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignees' own use.
2. Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignees any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.
  3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignees' expense, perform any other acts that are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.
  4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignees, its successors, assigns and other legal representative, and shall be binding upon us, as well as our heirs, legal representatives, and assigns.
  5. Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.
  6. Authorize Kilpatrick Townsend & Stockton to insert above the application number and filing date of the above-described patent application when known.

Signed on the date(s) indicated beside our signatures.

Signature: *Ai-ichiro Sasaki*  
Ai-ichiro Sasaki

Date: January 27, 2020

Signature: *Junichi Kodate*  
Junichi Kodate

Date: January 27, 2020

Signature: \_\_\_\_\_  
Jumpei Fuke

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Hiroki Okada

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Hiroko Okuyama

Date: \_\_\_\_\_

**ASSIGNMENT**

---

We, the undersigned, have invented certain inventions and improvements disclosed in a utility (provisional or non-provisional) or design patent application entitled

“DUAL LOOP ANTENNA,”

which was filed with the U.S. Patent and Trademark Office on February 20, 2020, and assigned application no. 16/640,385;

For one dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which we acknowledge, we:

1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to **Nippon Telegraph and Telephone Corporation**, a company organized and existing under the laws of Japan having a principal place of business at 5-1, Otemachi 1-chome, Chiyoda-ku, Tokyo JAPAN 1008116 and **Toyota Jidosha Kabushiki Kaisha**, a company organized and existing under the laws of Japan having a principal place of business at 1, Toyota-cho, Toyota-shi, Aichi JAPAN 4718571 (hereinafter referred to as “Assignees”), the entire right, title, and interest in and to:
  - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
  - (b) the above-referenced patent application, and all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
  - (c) the right to claim priority to the above-referenced patent application, and any and all applications referenced in subsection (b); and
  - (d) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this

paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and

- (e) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignees' own use.
2. Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignees any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.
  3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignees' expense, perform any other acts that are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.
  4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignees, its successors, assigns and other legal representative, and shall be binding upon us, as well as our heirs, legal representatives, and assigns.
  5. Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.
  6. Authorize Kilpatrick Townsend & Stockton to insert above the application number and filing date of the above-described patent application when known.

Signed on the date(s) indicated beside our signatures.

Signature: \_\_\_\_\_  
Ai-ichiro Sasaki

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Junichi Kodate

Date: \_\_\_\_\_

Signature: Jumpei Fuke  
Jumpei Fuke

Date: Dec. 16, 2019

Signature: Hiroki Okada  
Hiroki Okada

Date: Dec. 16, 2019

Signature: \_\_\_\_\_  
Hiroko Okuyama

Date: \_\_\_\_\_



---

**ASSIGNMENT**

---

We, the undersigned, have invented certain inventions and improvements disclosed in a utility (provisional or non-provisional) or design patent application entitled

“DUAL LOOP ANTENNA,”

which was filed with the U.S. Patent and Trademark Office on February 20, 2020, and assigned application no. 16/640,385;

For one dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which we acknowledge, we:

1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to **Nippon Telegraph and Telephone Corporation**, a company organized and existing under the laws of Japan having a principal place of business at 5-1, Otemachi 1-chome, Chiyoda-ku, Tokyo JAPAN 1008116 and **Toyota Jidosha Kabushiki Kaisha**, a company organized and existing under the laws of Japan having a principal place of business at 1, Toyota-cho, Toyota-shi, Aichi JAPAN 4718571 (hereinafter referred to as “Assignees”), the entire right, title, and interest in and to:
  - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
  - (b) the above-referenced patent application, and all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
  - (c) the right to claim priority to the above-referenced patent application, and any and all applications referenced in subsection (b); and
  - (d) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this

paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and

- (e) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignees' own use.
- 2. Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignees any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.
- 3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignees' expense, perform any other acts that are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.
- 4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignees, its successors, assigns and other legal representative, and shall be binding upon us, as well as our heirs, legal representatives, and assigns.
- 5. Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.
- 6. Authorize Kilpatrick Townsend & Stockton to insert above the application number and filing date of the above-described patent application when known.

Signed on the date(s) indicated beside our signatures.

Signature: \_\_\_\_\_  
Ai-ichiro Sasaki

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Junichi Kodate

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Junpei Fuke

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Hiroki Okada

Date: \_\_\_\_\_

Signature: Hiroko Okuyama  
Hiroko Okuyama

Date: December 11, 2019