

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SHUAI SHAO	04/22/2015
KEN GUDAN	04/22/2015
JONATHAN J. HULL	04/22/2015
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<b>Name:</b>	RICOH CO., LTD.
<b>Street Address:</b>	15-5 MINAMI AOYAMA 1-CHOME
<b>Internal Address:</b>	MINATO-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	107-8544
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14584821
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<b>ATTORNEY DOCKET NUMBER:</b>	74451P242
<b>NAME OF SUBMITTER:</b>	MICHAEL J. MALLIE
<b>SIGNATURE:</b>	/Michael J. Mallie/
<b>DATE SIGNED:</b>	04/24/2015
<b>Total Attachments: 2</b>	
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source=74451P242_Assignment#page2.tif	

**ASSIGNMENT OF PATENT APPLICATION**

Attorney Docket No.: 74451P242

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we, the undersigned, Shuai Shao; Ken Gudan; Jonathan J. Hull

hereby sell, assign, and transfer to Ricoh Co., Ltd.

a Corporation of Japan  
(Type of Assignee: e.g., corporation, company, partnership, university, etc.)

having a principal place of business at 15-5 Minami Aoyama 1-Chome, Minato-Ku, Tokyo,  
107-8544 Japan

("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all inventions or improvements that are disclosed in the application (provisional or non-provisional) for the United States patent which for the non-provisional application may have a declaration executed by the undersigned prior hereto or concurrently herewith and which application (provisional or non-provisional) is entitled

MANUALLY BEAM STEERED PHASED ARRAY

said patent application also identified as follows (when known):

[I/we hereby authorize an attorney or agent for said Assignee to insert below the application number and filing date of said patent application when known.]

United States Patent Application Number 14/584,821 filed December 29, 2014,

and in and to said application (provisional or non-provisional) and all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions or improvements; and in and to all original patents, reissued patents, reexamination certificates, and extensions, that have been or shall be issued in the United States and all foreign countries on said inventions or improvements; and in and to all rights of priority resulting from the filing of said United States application;

agree that said Assignee may apply for and receive a patent or patents for said inventions or improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications on any and all said inventions or improvements; execute all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and representatives all facts known to the undersigned relating to said inventions or improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or

representatives in securing and maintaining proper patent protection for said inventions or improvements and for vesting title to said inventions or improvements, and all applications for patents and all patents on said inventions or improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

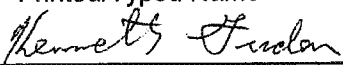
**Each Inventor: Please Sign and Date Below:**

4/22, 2015  
Date

  
Signature


Shuai Shao  
Printed/Typed Name

4/22, 2015  
Date

  
Signature

Ken Gudan  
Printed/Typed Name

4/22, 2015  
Date

  
Signature

Jonathan J. Hull  
Printed/Typed Name

Assignment Document Return Address:  
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