

## PATENT ASSIGNMENT COVER SHEET

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<b>Name</b>	<b>Execution Date</b>
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<b>PROPERTY NUMBERS Total: 1</b>	
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<b>DATE SIGNED:</b>	12/21/2017
<b>Total Attachments: 2</b>	
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## ASSIGNMENT

KABUSHIKI KAISHA TOSHIBA, (referred to hereinafter as the "Assignor"), a Corporation organized under the laws of Japan and having a place of business at 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, JAPAN, is an Applicant and Assignee of the entire right, title and interest in and to the U.S. Patent Applications listed on the attached list (Appendix A) and the inventions described and claimed therein.

TOSHIBA MEMORY CORPORATION (referred to hereinafter as the "Assignee"), a corporation organized under the laws of Japan and having a place of business at 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-0023, JAPAN is desirous of acquiring the entire right, title and interest in and to said U.S. Patent Applications listed on attached list (Appendix A) and the inventions described and claimed therein.

For good and valuable consideration, the receipt of which is hereby acknowledged, the Assignor hereby sells, assigns, transfers and sets over to said Assignee, its successors, assigns or other legal representatives, its entire right, title and interest in and to said U.S. Patent Applications listed on attached list (Appendix A) and the inventions described and claimed therein, including all reissues and reexaminations, together with all claims for damages by reason of past infringement of said U.S. Patent Applications, with the right to sue for and collect same for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives.

IN WITNESS WHEREOF Assignor has caused the signature of its proper officer to be subscribed hereto this 30 day of June, 2017 2017.

KABUSHIKI KAISHA TOSHIBA

By: Ikuko Shimogawara  
Name : Ikuko SHIMOAWARA  
Title : General Manager, Intellectual Property Division

# Appendix A - List of U.S. Patent Applications

	U.S. Patent Application No.	Filing date	Docket #
1	14/593646	2015/1/9	14475
2	14/629023	2015/2/23	14453
3	14/636961	2015/3/3	14496
4	14/637019	2015/3/3	14523
5	14/638731	2015/3/4	14581
6	14/643657	2015/3/10	14525
7	14/644159	2015/3/10	14594
8	14/645254	2015/3/11	14638
9	15/061850	2016/3/4	15355
10	15/066810	2016/3/10	15202
11	15/068107	2016/3/11	15403
12	15/068159	2016/3/11	15352
13	15/069718	2016/3/14	15442
14	15/069740	2016/3/14	15443
15	15/198543	2016/6/30	13329C1/RSB
16	15/211184	2016/7/15	13508C1
17	15/261755	2016/9/9	16171
18	15/261786	2016/9/9	16172
19	15/261798	2016/9/9	16173
20	15/264552	2016/9/13	16104
21	15/267093	2016/9/15	16151
22	15/268459	2016/9/16	16144
23	15/268527	2016/9/16	16150
24	15/268507	2016/9/16	16175
25	15/268535	2016/9/16	16154
26	15/268520	2016/9/16	16101
27	15/268534	2016/9/16	16153
28	15/270672	2016/9/20	16174
29	15/397594	2017/1/3	13334D1
30	15/400466	2017/1/6	14231D1
31	15/445829	2017/2/28	16457
32	62/473068	2017/3/17	17120
33	62/473056	2017/3/17	17119
34	62/473030	2017/3/17	17118
35	15/463331	2017/3/20	16464
36	15/463215	2017/3/20	16463
37	15/463304	2017/3/20	16472
38	14/478925	2014/9/5	14242
39	14/478971	2014/9/5	14241
40	14/630376	2015/2/24	14563
41	14/630398	2015/2/24	14532
42	14/639675	2015/3/5	14562
43	14/981627	2015/12/28	15299
44	15/041722	2016/2/11	13678C1
45	15/066851	2016/3/10	15438
46	15/267125	2016/9/15	16123
47	14/160166	2014/1/21	13678
48	14/479192	2014/9/5	14231

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