

# Exhibit 4

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

ELM 3DS INNOVATIONS, LLC, a  
Delaware limited liability company,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD., a  
Korean business entity,  
SAMSUNG SEMICONDUCTOR, INC., a  
California corporation,  
SAMSUNG ELECTRONICS AMERICA,  
INC., a New York corporation, and SAMSUNG  
AUSTIN SEMICONDUCTOR,  
LLC, a Delaware limited liability company,

Defendants.

C.A. No. 1:14-cv-01430-LPS-CJB

**Jury Trial Demanded**

**~~FIRST~~ SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Elm 3DS Innovations, LLC (“Plaintiff” or “Elm 3DS”), by its attorneys, for its complaint against Defendants Samsung Electronics Co., Ltd., and its U.S. subsidiaries and related entities Samsung Semiconductor, Inc., Samsung Electronics America, Inc., and Samsung Austin Semiconductor, LLC (individually or collectively “Defendants” or “Samsung”) hereby supplements its First Amended Complaint (D.I. 18) and alleges as follows:

**INTRODUCTION**

1. This is an action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 1 et seq., for infringing the following Elm 3DS patents:

- (a) U.S. Patent No. 7,193,239 (“Leedy ’239 patent”), entitled “Three Dimensional Structure Integrated Circuit,” owned by Elm 3DS Innovations, LLC (attached as Ex. 1);
- (b) U.S. Patent No. 7,474,004 (“Leedy ’004 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. 2);

- (c) U.S. Patent No. 7,504,732 (“Leedy ’732 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. 3);
- ~~(d) U.S. Patent No. 8,035,233 (“Leedy ’233 patent”), entitled “Adjacent Substantially Flexible Substrates Having Integrated Circuits That Are Bonded Together By Non-Polymeric Layer,” owned by Elm 3DS Innovations, LLC (attached as Ex. 4);~~
- ~~(e)(d)~~ U.S. Patent No. 8,410,617 (“Leedy ’617 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~4~~5);
- ~~(f)(e)~~ U.S. Patent No. 8,629,542 (“Leedy ’542 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~5~~6);
- ~~(g)(f)~~ U.S. Patent No. 8,653,672 (“Leedy ’672 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~6~~7);
- ~~(h)(g)~~ U.S. Patent No. 8,796,862 (“Leedy ’862 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~7~~8);
- ~~(i)(h)~~ U.S. Patent No. 8,841,778 (“Leedy ’778 patent”), entitled “Three Dimensional Memory Structure,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~8~~9).
- ~~(j)(i)~~ U.S. Patent No. 8,907,499 (“Leedy ’499 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~9~~10);
- ~~(k)(j)~~ U.S. Patent No. 8,928,119 (“Leedy ’119 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~10~~11);
- ~~(l)(k)~~ U.S. Patent No. 8,933,570 (“Leedy ’570 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~11~~12); and
- ~~(m)(l)~~ U.S. Patent No. 8,791,581 (“Leedy ’581 patent”), entitled “Three Dimensional Structure Memory,” owned by Elm 3DS Innovations, LLC (attached as Ex. ~~12~~29).

2. The Elm 3DS patents cover foundational semiconductor technologies in the design and manufacture of three-dimensional integrated circuits such as memory, processors, and image sensors. These fundamental technologies reduce manufacturing costs while improving speed and efficiency. Among other things, the Elm 3DS patents disclose technologies that enable semiconductor manufacturers to stack multiple integrated circuits (“die”) on top of one another within one integrated circuit package, and to form interconnect circuitry for communication among the stacked die, including interconnect circuitry passing through silicon substrates in stacked integrated circuits.

3. Samsung has infringed and continues to infringe the Elm 3DS patents, directly and indirectly, by making using, selling, offering for sale, and/or importing into the United States, semiconductor products with multiple stacked die and/or electronics products containing the same; and by encouraging third parties to use, sell, offer for sale, and/or import into the United States, Samsung semiconductor products with multiple stacked die and/or electronics products containing the same, with knowledge of the Elm 3DS patents and in the infringement resulting therefrom.

4. Elm 3DS incorporates by reference “Elm’s Disclosure of Asserted Claims and Infringement Contentions,” served on Samsung 11/20/2015.

#### **THE PARTIES**

5. Elm 3DS Innovations, LLC, is a Delaware limited liability company with its principal address at 26147 Carmelo Street, Carmel, California 93923. Elm 3DS owns patents, originally issued to its President, inventor Glenn J. Leedy, covering Mr. Leedy’s groundbreaking technology for thinning, vertically stacking and interconnecting integrated circuits.

6. Samsung Electronics Co., Ltd. (“SEC”) is a Korean business entity that lists its global headquarters as 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea. On information and belief, SEC is the global leader in the electronics market, which includes computer

memory and consumer electronics products such as mobile phones and tablet computers. On information and belief, SEC is the second largest semiconductor manufacturer in the world, and the leader in DRAM, NAND Flash, solid state drives (“SSDs”), mobile DRAM and graphics memory. On information and belief, SEC designs, manufactures, has manufactured, uses, offers for sale, sells and/or imports into the United States—including into Delaware—billions of dollars of computer memory and consumer electronics each year.

7. Samsung Electronics America, Inc. (“SEA”) is a New York corporation that lists its headquarters as 85 Challenger Road, Ridgefield Park, New Jersey 07660. SEA is a wholly-owned subsidiary of SEC. On information and belief, SEA markets, uses, offers for sale, sells and/or imports into the United States—including into Delaware—various electronics products including, plasma TVs and cameras; computer monitors, laser printers and solid state drives; and handheld wireless smartphones.

8. Samsung Semiconductor, Inc. (“SSI”) is a California corporation that lists its headquarters as 3655 North First Street, San Jose, California 95134. SSI is a wholly-owned subsidiary of SEC. On information and belief, SSI manufactures, has manufactured, uses, offers for sale, sells and/or imports into the United States—including into Delaware—various semiconductor products including DRAM, NAND Flash, SSDs, mobile DRAM, graphics memory, and system logic.

9. Samsung Austin Semiconductor, LLC (“SAS”) is a Delaware limited liability company that lists its headquarters as 12100 Samsung Boulevard, Austin, TX 78754. On information and belief, SAS operates as a subsidiary of SSI. On information and belief, SAS operates a semiconductor fabrication plant in Austin, TX, where it manufactures, has manufactured, uses, offers for sale, sells and/or imports into the United States—including into Delaware—NAND flash memory and system logic.

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