IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SCANTON TECHNOLOGIES, LLC,	)	
Plaintiff,	)	
	)	**Civil Action No.**
v.	)	
	)	
AVALANCHE TECHNOLOGY, INC.	)	**JURY TRIAL DEMANDED**
Defendant.	)	

PLAINTIFF'S ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Scanton Technologies, LLC ("Scanton") files this Original Complaint and demand for jury trial seeking relief from patent infringement of the claims of U.S. Patent No. 7,742,333 ("the '333 patent") (referred to as the "Patent-in-Suit") by Avalanche Technology, Inc. ("Avalanche").

I. THE PARTIES

1. Plaintiff Scanton is a Texas Limited Liability Company with its principal place of business located at 3333 Preston Road STE 300 - 1050, Frisco, TX 75034.

2. On information and belief, Avalanche is a corporation organized and existing under the laws of the state of Delaware, with a principal place of business located at 3450 W Warren Ave, Fremont, CA 94538. Avalanche is incorporated in Delaware. On information and belief, Avalanche sells and offers to sell products and services throughout Delaware, including in this judicial district, and introduces products and services that perform infringing methods or processes into the stream of commerce knowing that they would be sold in Delaware and this judicial district. Avalanche can be served with process at its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, De 19808 or anywhere else it may be found.

II. JURISDICTION AND VENUE

3. This Court has original subject-matter jurisdiction over the entire action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because Plaintiff's claim arises under an Act of Congress relating to patents, namely, 35 U.S.C. § 271.

4. This Court has personal jurisdiction over Defendant because: (i) Defendant is present within or has minimum contacts within the State of Delaware and this judicial district; (ii) Defendant has purposefully availed itself of the privileges of conducting business in the State of Delaware and in this judicial district; and (iii) Plaintiff's cause of action arises directly from Defendant's business contacts and other activities in the State of Delaware and in this judicial district.

5. Venue is proper in this district under 28 U.S.C. §§ 1391(b) and 1400(b). Defendant has committed acts of infringement and is incorporated in Delaware. Further, venue is proper because Defendant conducts substantial business in this forum, directly or through intermediaries, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in Delaware and this District.

III. INFRINGEMENT

A. Infringement of the '333 Patent

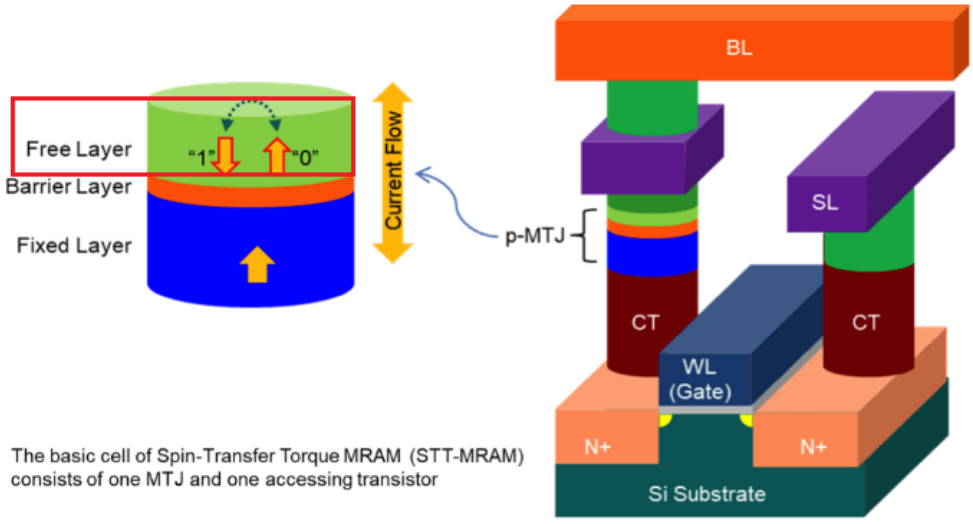
6. On June 22, 2010, U.S. Patent No. 7,742,333 ("the '333 patent", included as an attachment and part of this Complaint) entitled "Magnetic Memory Device Using Domain Structure and Multi-State of Ferromagnetic Material" was duly and legally issued by the U.S. Patent and Trademark Office. Scanton owns the '333 patent by assignment.

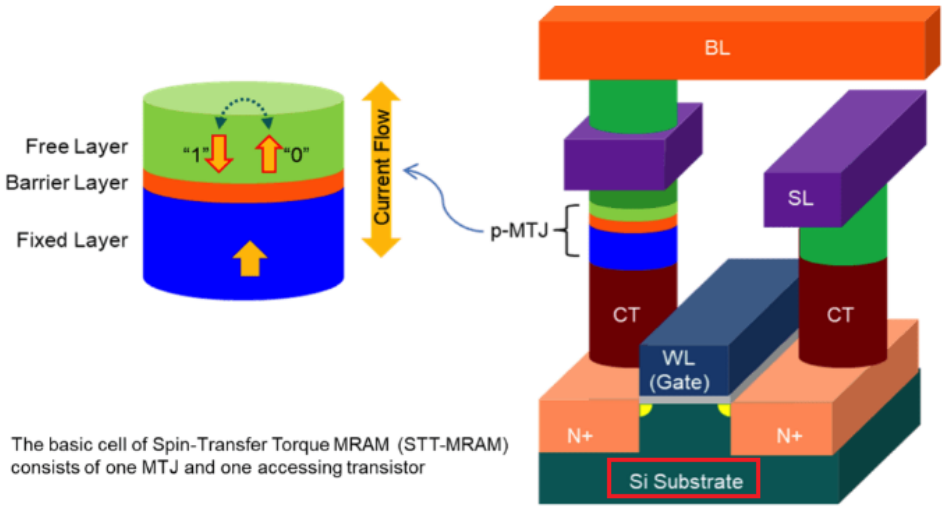
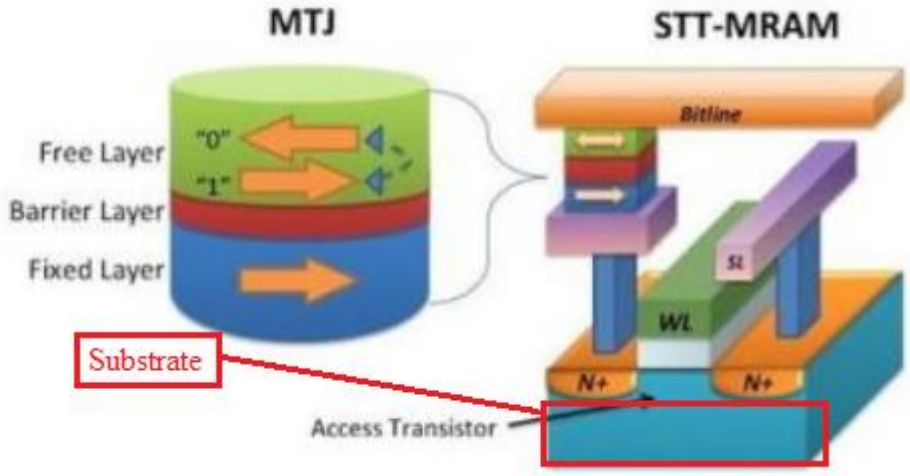
7. The '333 patent provide an apparatus and associated systems and methods for a memory device using a multi-domain state of a semiconductor material.

8. Avalanche designs, manufactures, markets and sells memory devivces including, but not limited to, the Avalanche Tech STT-MRAM system, that infringe one or more claims of the '333 patent, including one or more of claims 1-8, literally or under the doctrine of equivalents. Defendant put the inventions claimed by the '333 Patent into service (i.e., used them); but for Defendant's actions, the claimed-inventions embodiments involving Defendant's products and services would never have been put into service. Defendant's acts complained of herein caused those claimed-invention embodiments as a whole to perform, and Defendant's procurement of monetary and commercial benefit from it.

9. Support for the allegations of infringement may be found in the following preliminary table:

US7742333B2	Avalanche Tech STT-MRAM ("The accused product")
2. A magnetic memory device using a domain structure and multi-state of a ferromagnetic material comprising:	The accused product manufactures a magnetic memory device (e.g., magnetic random-access memory) using a domain structure (e.g., MTJ structure) and multi-state (e.g., high resistance state and low resistance state depending on magnetic orientation) of a ferromagnetic material (e.g., free layer).

	The Next-Generation MRAM Company Avalanche Technology, headquartered in Fremont, California, is the world leader in Spin Transfer Torque Magnetic RAM (STT-MRAM) non-volatile memory leveraging perpendicular magnetic tunnel junction (pMTJ) cell structure manufactured on 300mm standard CMOS process. Backed by more than 300+ granted patents around cell, circuit, and system design leveraging MRAM, our technology and products provide breakthrough speeds, unlimited endurance and non-volatility while reducing power and cost. With such attributes, our technology will serve and exceed our customers' objectives as a replacement for SRAM, eFlash, and ROM in embedded applications in addition to discrete SRAM, non-volatile SRAM, NOR and DRAM. https://www.avalanche-technology.com/ Avalanche's Perpendicular STT-MRAM Technology The core of Avalanche's STT-MRAM cell is a proprietary perpendicular magnetic tunnel junction (p-MTJ) element which includes including a magnetic fixed layer, a dielectric barrier layer and a changeable ferromagnetic storage layer. The magnetic orientation of the fixed layer is fixed during the manufacturing process. During a programming operation, the magnetic orientation of the storage layer is electrically switched from a parallel state (low resistance state "0") to an antiparallel state (high resistance state "1"), or vice versa, depending on the current direction through the p-MTJ element. Two distinct resistance states can thus be realized for data storage and sensing. The structure of the p-MTJ element can be tailored for different performance specs and application needs.  The basic cell of Spin-Transfer Torque MRAM (STT-MRAM) consists of one MTJ and one accessing transistor https://www.avalanche-technology.com/technology/mram-technology/
a substrate;	The accused product comprises a substrate (e.g., wafer substrate).

	 https://www.avalanche-technology.com/technology/mram-technology/  https://www.mram-info.com/stt-mram
first current lines formed on the substrate;	The accused product comprises first current lines formed on the substrate (e.g., wafer substrate).

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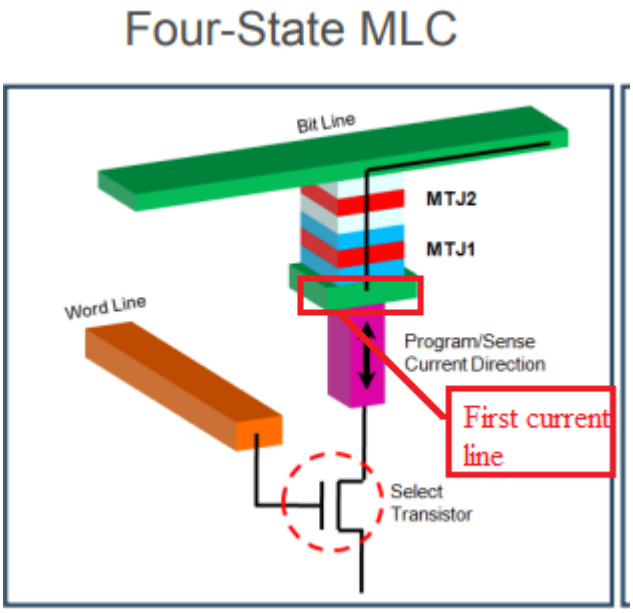

Source: Avalanche STT-MRAM Architectural Roadmap

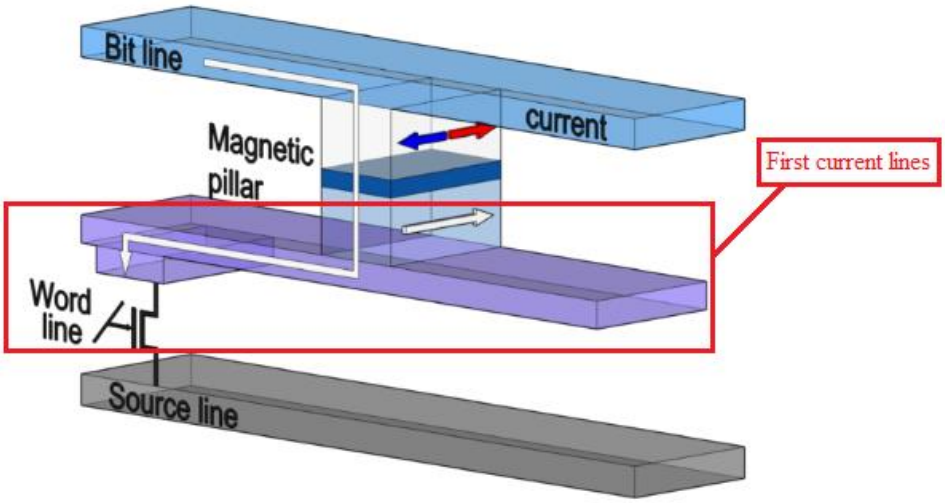

Figure 4.5: Schematic illustration of STT-MRAM switching [204].
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<td>an insulating film formed on the first current lines;</td>
<td>The accused product comprises an insulating film (e.g., barrier film) formed on the first current lines.</td>
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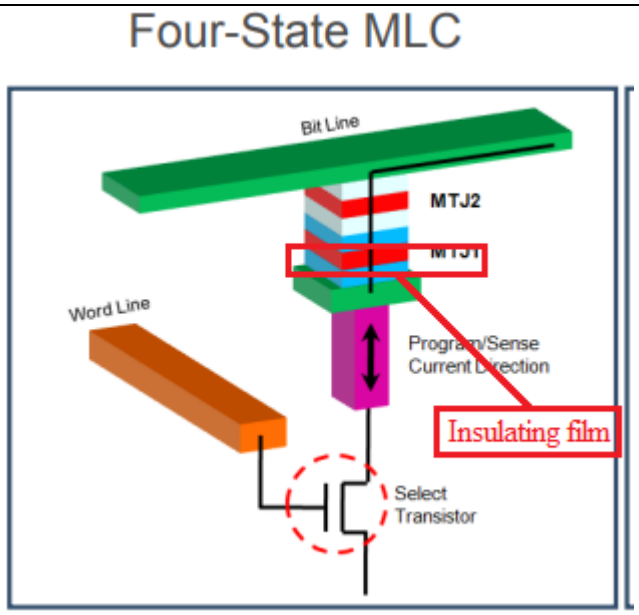
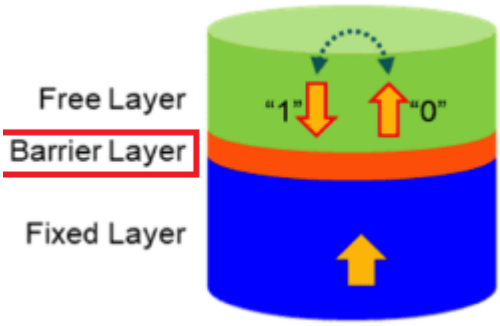
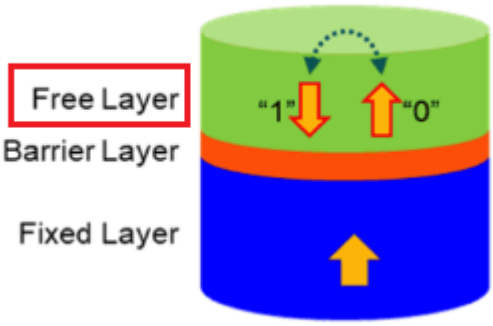
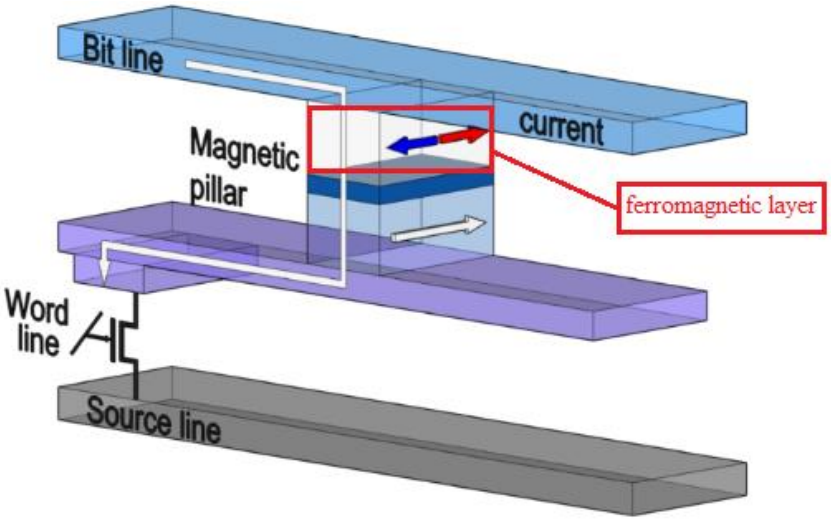
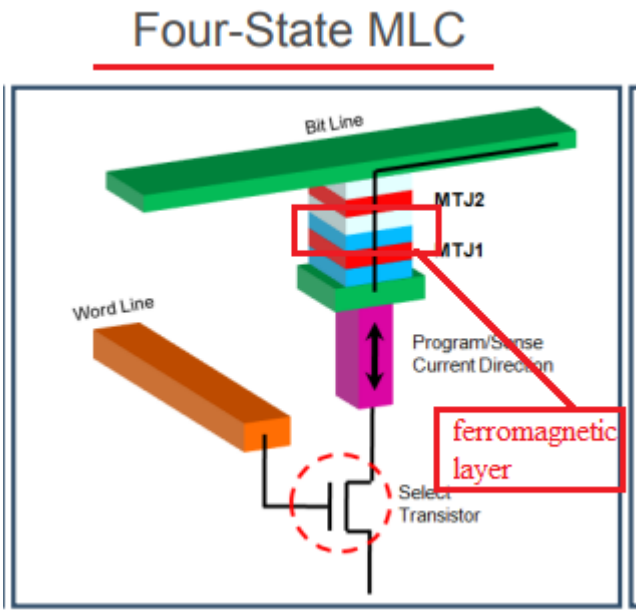
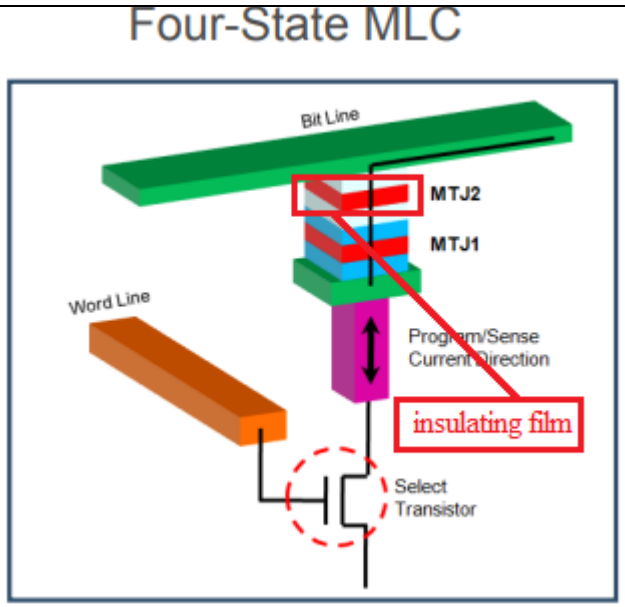
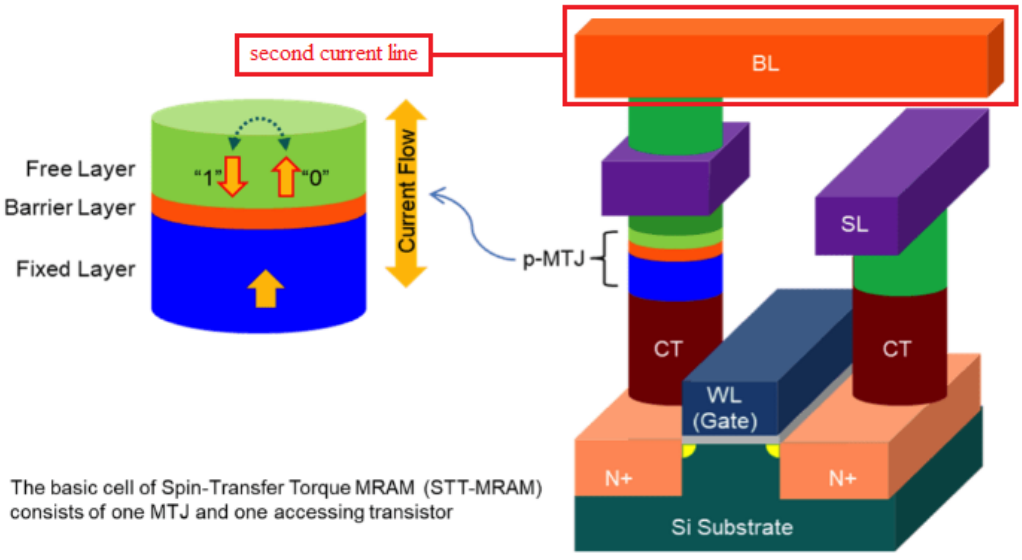
	 *Source: Avalanche STT-MRAM Architectural Roadmap*  https://www.avalanche-technology.com/technology/mram-technology/
a ferromagnetic layer formed on the insulating film, and storing and sensing multi-data through a planar hall effect	The accused product comprises a ferromagnetic layer (e.g., ferromagnetic Free layer) formed on the insulating film (e.g., barrier film), and storing and sensing multi-data (e.g., four-state MLC data) through a planar hall effect or magneto-resistance (e.g., magneto-resistance) using a single domain or multi-domain state.

or magneto-resistance using a single domain or multi-domain state;	 https://www.avalanche-technology.com/technology/mram-technology/  **Figure 4.5:** Schematic illustration of STT-MRAM switching [204]. The rise of artificial intelligence (AI) has been making a huge impact on our daily lives, especially in the fields of recommendation systems, image recognition, natural language processing, and autonomous driving. As the amount of input data, weight parameters and intermediate data in the machine learning process grows exponentially, memory becomes a critical bottleneck, which requires a high density, low power and high speed non-volatile memory (NVM) solution. Among emerging NVM technologies, spin-transfer torque magnetoresistive random access memory (STT-MRAM) based on perpendicular magnetic tunnel junctions (pMTJ) shows distinct advantages:

	https://www.avalanche-technology.com/avalanche-technology-delivered-stt-mram-for-artificial-intelligence-applications-keynote-at-semicon-taiwan-2020/  *Source: Avalanche STT-MRAM Architectural Roadmap* Multi-level cell (MLC) flash is a type of NAND flash memory that can store more than 1 bit per cell. NAND flash is a form of nonvolatile storage memory, which allows it to retain data without being attached to a power source. https://searchstorage.techtarget.com/definition/multi-level-cell-MLC
an insulating film formed on the ferromagnetic layer; and	The accused product comprises an insulating film (e.g., barrier layer) formed on the ferromagnetic layer (e.g., ferromagnetic Free layer).

	 *Source: Avalanche STT-MRAM Architectural Roadmap*
second current lines formed on the insulating film.	The accused product comprises second current lines (e.g., bit line) formed on the insulating film (e.g., barrier layer). 

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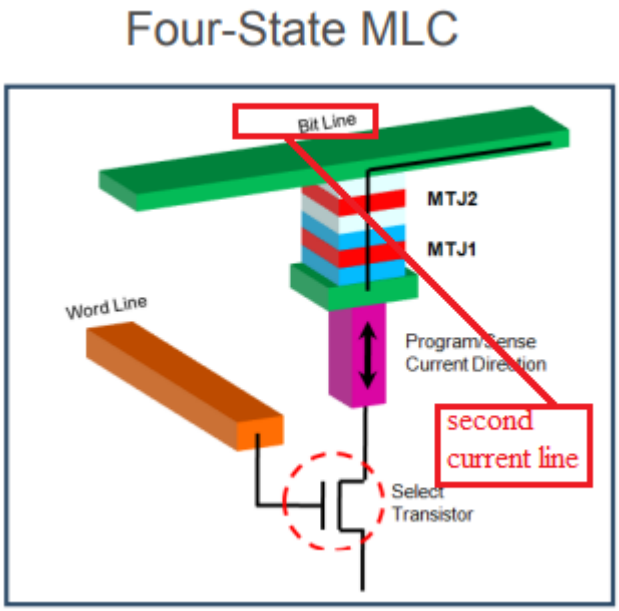
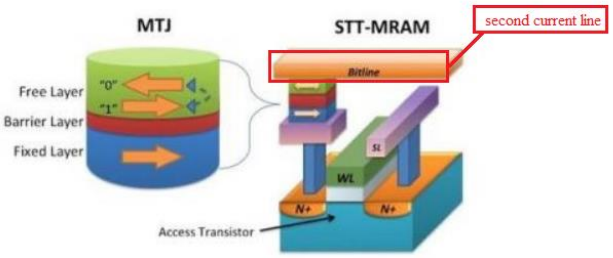


Source: Avalanche STT-MRAM Architectural Roadmap

STT stands for Spin-Transfer Torque. In an STT-MRAM device, the spin of the electrons is flipped using a spin-polarized current. This effect is achieved in a magnetic tunnel junction (MTJ) or a spin-valve, and STT-MRAM devices use STT tunnel junctions (STT-MTJ). A spin-polarized current is created by passing a current though a thin magnetic layer. This current is then directed into a thinner magnetic layer which transfers the angular momentum to the thin layer which changes its spin.



https://www.mram-info.com/stt-mram

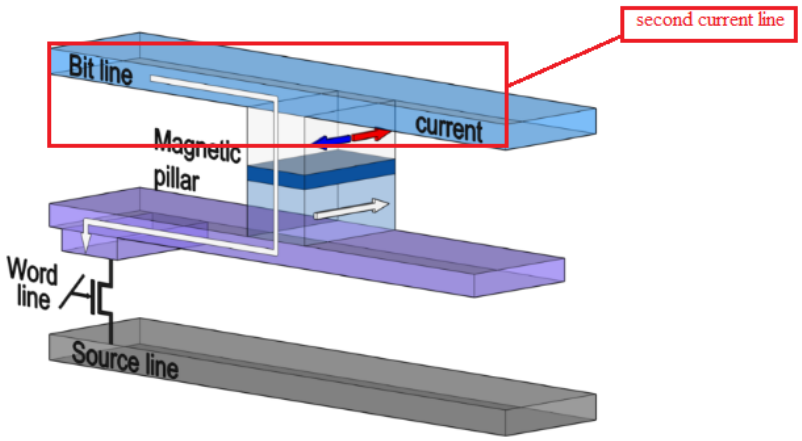


Figure 4.5: Schematic illustration of STT-MRAM switching [204].

10. These allegations of infringement are preliminary and are therefore subject to change. For instance, there are other of Defendant's products that infringe.

11. Avalanche has and continues to induce infringement. Avalanche has actively encouraged or instructed others (e.g., its customers and/or the customers of its related companies), and continues to do so, on how to use its products and services (e.g., memory systems and products/devices) such as to cause infringement of one or more of claims 1–8 of the '333 patent, literally or under the doctrine of equivalents. Moreover, Avalanche has known of the '333 patent and the technology underlying it from at least the date of issuance of the patent or the date of the filign of this lawsuit.

12. Avalanche has and continues to contributorily infringe. Avalanche has actively encouraged or instructed others (e.g., its customers and/or the customers of its related companies), and continues to do so, on how to use its products and services (e.g., memory systems and products/devices) such as to cause infringement of one or more of claims 1–8 of the '333 patent,

literally or under the doctrine of equivalents. Moreover, Avalanche has known of the '333 patent and the technology underlying it from at least the date of issuance of the patent or the date of the filign of this lawsuit.

13. Avalanche has caused and will continue to cause Scanton damage by direct and indirect infringement of (including inducing infringement of) the claims of the '333 patent.

IV. JURY DEMAND

Scanton hereby requests a trial by jury on issues so triable by right.

V. PRAYER FOR RELIEF

WHEREFORE, Scanton prays for relief as follows:

a. enter judgment that Defendant has infringed the claims of the '333 patent;

b. award Scanton damages in an amount sufficient to compensate it for Defendant's infringement of the '333 patent in an amount no less than a reasonable royalty or lost profits, together with pre-judgment and post-judgment interest and costs under 35 U.S.C. § 284;

c. award Scanton an accounting for acts of infringement not presented at trial and an award by the Court of additional damage for any such acts of infringement;

d. declare this case to be "exceptional" under 35 U.S.C. § 285 and award Scanton its attorneys' fees, expenses, and costs incurred in this action;

e. declare Defendant's infringement to be willful and treble the damages, including attorneys' fees, expenses, and costs incurred in this action and an increase in the damage award pursuant to 35 U.S.C. § 284;

f. a decree addressing future infringement that either (i) awards a permanent injunction enjoining Defendant and its agents, servants, employees, affiliates, divisions, and subsidiaries, and those in association with Defendant from infringing the claims of the Patents-in-Suit, or (ii) awards damages for future infringement in lieu of an injunction in an amount consistent with the fact that for future infringement the Defendant will be an adjudicated infringer of a valid patent, and trebles that amount in view of the fact that the future infringement will be willful as a matter of law; and

g. award Scanton such other and further relief as this Court deems just and proper.

DATED: November 30, 2021

Respectfully submitted,

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