UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICRON TECHNOLOGY, INC.,
Petitioner
v.

YANGTZE MEMORY TECHNOLOGIES COMPANY, LTD.,
Patent Owner

Case No.: IPR2024-00788
U.S. Patent No. 10,658,378
Issue Date: May 19, 2020
Title: THROUGH ARRAY CONTACT (TAC) FOR THREE-DIMENSIONAL MEMORY DEVICES

PETITIONER'S EXPLANATION OF MULTIPLE PETITIONS CHALLENGING U.S. PATENT 10,658,378 AND RANKING OF PETITIONS

As required by the Board's Trial Practice Guide, Petitioner Micron Technology Inc. ("Micron") provides this paper explaining the need for two parallel petitions requesting *inter partes* review ("IPR") of the claims of U.S. Patent No. 10,658,378 ("the '378 patent"). The '378 patent is owned by Yangtze Memory Technologies Company, Ltd. ("YMTC"). Micron has filed two IPR petitions relating to the '378 patent: IPR2024-00788 (filed April 30, 2024) seeks IPR of claims 15-17 and 19-20 while IPR2024-00909 (filed May 19, 2024) seeks IPR of claims 1-7 and 18. Both petitions rely on overlapping prior art, in particular Toyama (Ex. 1005). Each '378 patent claim-at-issue is addressed in only a single petition.

I. <u>Two Petitions Are Needed</u>

Micron submits that two petitions are needed here in view of YMTC's belated decision to interject additional, different asserted claims into the co-pending district court action relating to the '378 patent.

The '378 patent includes three independent claims: 1, 9, and 15. Claim 9 is a method claim and is not at issue. Claims 1 and 15 are apparatus claims directed to a "three-dimensional (3D) memory device." Both generally require a 3D memory device with "through array contacts" (or TACs) extending through the memory's various layers. Claim 15 is broader. Claim 1 is narrower and imposes additional structural requirements that are not part of claim 15. In particular, it requires the presence of both an "epitaxial layer between … channel structures and

semiconductor substrate" and an "etch stop plug on each" of the "channel structures." Claim 18—which depends on claim 15—includes similar narrowing limitations.

YMTC filed a district court complaint alleging infringement of the '378 patent and several other unrelated patents on November 9, 2023. *See* Ex. 1033. The complaint identified independent claim 15 as the sole asserted claim from the '378 patent. *See id.* at 16. YMTC filed an amended complaint on February 2, 2024. *See* Ex. 1034. Once again, YMTC identified claim 15 as the only '378 patent asserted claim. *See id.* at 17.

In view of YMTC's identification of claim 15, Micron filed its first petition for IPR of the '378 patent addressing that claim and most of the claims that depend on it on April 30, 2024. *See* IPR2024-00788, Paper 1. This first petition did not address claim 1 or dependent claim 18 because YMTC had not yet (and could not have credibly) alleged that any Micron product included the type of "epitaxial layer" those claims require.

A week after receiving Micron's IPR petition, YMTC served a "Disclosure of Asserted Claims and Infringement Contentions" in the co-pending district court action involving the '378 patent. *See* Ex. 1035. These contentions expanded the collection of asserted '378 patent claims to include not just broader claim 15, but also narrower claims 1-7 and 18, all of which require an "epitaxial layer" and an

"etch stop plug." *See id.* at 2. While Micron does not believe that these expanded infringement allegations have merit, it followed up by expeditiously filing a further IPR petition challenging the newly asserted claims.

The Board has explained that multiple, parallel petitions are justified when a Patent Owner "has asserted a large number of claims in litigation." Nov. 2019 Consolidated Trial Practice Guide, 59. Here, YMTC asserted multiple independent claims from the '378 patent with differing scope. Claim 15 (and the claims that depend on it) broadly embraces a "three-dimensional (3D) memory device" with "through array contacts." Independent claim 1 and similar dependent claim 18, however, more narrowly requires additional structure including an "epitaxial layer" and "etch stop plug[s]." Moreover, not only did YMTC assert multiple different independent claims, but it did so in a staggered, staged fashion. Thus, even if it were possible for Micron to challenge all of the now asserted claims in a single petition, it was not put on notice of the need to do so until ***after*** it had already filed its first petition. Two petitions are justified to account for these unique factual circumstances.

Micron also submits that any additional burden on either the Board or Patent Owner resulting from multiple petitions in this case should be negligible. Both petitions rely on the same collection of prior art. In addition, Micron has employed the same expert witness to support both petitions. This will maximize the efficiency

of depositions, briefing, and oral argument and avoid duplication of effort. This further supports institution.

II. Petition Ranking

For the reasons discussed above and in the petitions themselves, the Board should institute both petitions. Under the circumstances, Micron submits that a ranking of petitions is not appropriate given that they challenge unique claim sets with no overlap. In the event, however, that the Board determines that only one petition should be instituted, Micron requests that the Board consider the petitions in the following order:

Rank	Petition	Challenged Claims
1	IPR2024-00788	15-17 and 19-20
2	IPR2024-00909	1-7 and 18

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing paper was caused to be served on May 19, 2024 via electronic mail, upon the following attorneys of record for the Patent Owner:

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