

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICRON TECHNOLOGY, INC.,
Petitioner,

v.

VERVAIN, LLC,
Patent Owner.

IPR2021-01549
U.S. Patent No. 9,997,240

**DECLARATION OF SUNIL P. KHATRI
IN SUPPORT OF PATENT OWNER'S RESPONSE**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND AND QUALIFICATIONS	1
III.	SCOPE OF ASSIGNMENT AND MATERIALS CONSIDERED	12
IV.	PERSON OF ORDINARY SKILL IN THE ART	13
V.	GENERAL BACKGROUND OF THE RELEVANT TECHNOLOGY	15
	A. SLC and MLC Flash	17
	B. Address Table	19
	C. Data Integrity Tests.....	20
	D. Hot and Cold Data	20
VI.	THE '240 PATENT	21
VII.	CLAIM CONSTRUCTION.....	22
	A. “blocks” (claims 1, 6)	22
	B. “data integrity test” (claim 1).....	27
	C. “on a periodic basis” (claims 1, 6).....	27
VIII.	OVERVIEW OF THE PRIOR ART.....	27
	A. Dusija (Ex. 1010).....	27
	B. Sutardja (Ex. 1011).....	32
	C. Chin (Ex. 1030).....	37
IX.	THE CITED REFERENCES DO NOT DISCLOSE OR SUGGEST ALL OF THE FEATURES OF CLAIMS 1-2 and 6-7.....	41

A.	Dusija in View of Sutardja Does Not Disclose or Suggest All the Features of Claims 1-2 and 6-7 (Ground 1).....	41
1.	<i>Limitation [1.F] – “wherein the controller is further adapted to determine which of the blocks of the plurality of the blocks in the MLC and SLC non-volatile memory modules are accessed most frequently and wherein the controller segregates those blocks that receive frequent writes into the at least on SLC non-volatile memory module and those blocks that receive infrequent writes into the at least one MLC nonvolatile module”</i>	41
2.	<i>Limitation [1.G] – “maintain a count value of the blocks in the MLC non-volatile memory module determined to have received frequent writes and that are accessed most frequently on a periodic basis when the count value is a predetermined count value, transfer the contents of the counted blocks in the MLC non-volatile memory module determined to have received frequent writes after reaching the predetermined count value, transfer the contents of the counted blocks in the MLC non-volatile memory module determined to have received frequent writes after reaching the predetermined count value to the SLC non-volatile memory module and which determined blocks in the SLC are determined in accordance with the next equivalent range of physical addresses determined by the controller”</i>	53
3.	Claims 2, 6, and 7 (Ground 1)	60

Declaration of Sunil P. Khatri, Ph. D.
IPR2021-01549
U.S. Patent No. 9,997,240

B.	Dusija in View of Sutardja and Chin Does Not Disclose or Suggest All the Features of 1-2 and 6-7 (Ground 2).....	60
X.	CONCLUSION	62

DECLARATION OF SUNIL P. KHATRI, PH. D

I, Sunil P. Khatri, do hereby declare as follows:

I. INTRODUCTION

1. I have been retained on behalf of Vervain, LLC (“Vervain”), and its counsel, McKool Smith, P.C., as an expert in this proceeding. I am personally knowledgeable about the matters stated herein and am competent to make this declaration.

2. I understand that Vervain will submit this Declaration in connection with the Patent Owner’s Response in IPR2021-01549, which I have been informed is an *inter partes* review (IPR) proceeding challenging the patentability of certain claims of U.S. Patent No. 9,997,240 (“the ’240 patent” or “the challenged patent”).

3. I receive compensation at an hourly rate of \$700 per hour for my time working on this matter, plus expenses. I have no financial interest in Vervain or in the patents involved in this litigation, and my compensation is not dependent on the outcome of this litigation. The conclusions I present are due to my own judgment.

II. BACKGROUND AND QUALIFICATIONS

4. I have over thirty-five years of experience with electronics, electrical engineering, and computer engineering. A copy of my latest curriculum vitae (CV), which I understand was submitted previously as part of my prior declaration in this

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.