

**BATHAE DUNNE LLP**

Yavar Bathaee (CA 282388)  
yavar@bathaeedunne.com  
Andrew C. Wolinsky (*p.h.v. forthcoming*)  
awolinsky@bathaeedunne.com  
445 Park Avenue, 9th Floor  
New York, NY 10022  
Tel.: (332) 322-8835

Brian J. Dunne (CA 275689)  
bdunne@bathaeedunne.com  
Edward M. Grauman (*p.h.v. forthcoming*)  
egrauman@bathaeedunne.com  
901 South MoPac Expressway  
Plaza I, Suite 300  
Austin, TX 78746  
Tel.: (213) 462-2772

*Attorneys for Plaintiffs and the Proposed  
Classes*

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION**

TARAN PIETOSI and SUKHDIP RAI,  
individually and on behalf of all others similarly  
situated,

Plaintiffs,

v.

HP, INC., a Delaware corporation,

Defendant.

Case No. 5:22-cv-4273

**CLASS ACTION COMPLAINT**

**DEMAND FOR JURY TRIAL**

**TABLE OF CONTENTS**

1

2 INTRODUCTION ..... 1

3 PARTIES ..... 6

4 I. PLAINTIFFS ..... 6

5 II. DEFENDANT..... 8

6 JURISDICTION AND VENUE ..... 10

7 DIVISIONAL ASSIGNMENT..... 11

8 FACTS ..... 11

9 I. THE TRUSTED PLATFORM MODULE (TPM) ..... 11

10 A. The Advent of TPM ..... 11

11 B. The TPM as an External System..... 14

12 II. MICROSOFT FORCES TPM ADOPTION AS PART OF WINDOWS 11..... 17

13 A. The Growing Risk of Firmware Attacks and the Need for Hardware Security Solutions  
..... 17

14 B. The Onslaught of Firmware Attacks..... 18

15 C. Microsoft Requires a TPM to Run Windows 11 ..... 22

16 III. AMD IMPLEMENTS A DEFEAT DEVICE—A FIRMWARE TPM BUILT ON A  
17 PLATFORM WITH DIRECT ACCESS TO PRIVILEGED SYSTEM RESOURCES ..... 25

18 A. The AMD Platform Security Processor ..... 25

19 B. AMD Shoehorns a Software-Based TPM into the PSP as Firmware ..... 28

20 IV. AMD’S FLAWED DESIGN RESULTS IN PLAYBACK AND GAMING  
21 STUTTERING ..... 30

22 A. AMD-Based System Users Flood the Internet with Complaints of Stuttering When  
23 Watching Video, Listening to Music, Playing Video Games, and Even  
24 Videoconferencing..... 30

25 B. HP’s Forums Receive Repeated Complaints of Stuttering ..... 33

26 C. AMD Acknowledges the Stuttering Problem and Recommends Its Users Purchase  
27 Hardware TPMs as a “Workaround” ..... 34

28 D. The Stuttering Was Caused by a Serious Design Flaw that Cannot Be Fixed through a  
29 Firmware Update ..... 35

1 V. HP JOINTLY MARKETS AMD’S CPUS AND KNEW ABOUT THE FTPM’S  
 2 FLAWED DESIGN ..... 36  
 3 A. HP Jointly Markets Its PCs and Laptops with AMD, Touting AMD Processors for  
 4 Multimedia, Gaming, and Security Applications ..... 36  
 5 B. HP Knew and Knows About the AMD PSP/FTPM Design Flaw, Including Its Stuttering  
 6 Manifestation ..... 44  
 7 VI. HP OVERCHARGED CONSUMERS FOR PCS WITH AMD CPUS AS A RESULT  
 8 OF ITS FALSE AND MISLEADING STATEMENTS AND OMISSIONS ..... 46  
 9 CLASS ACTION ALLEGATIONS ..... 50  
 10 CLAIMS FOR RELIEF ..... 56  
 11 A. Nationwide Claims..... 56  
 12 B. Claims Brought on Behalf of the California Subclass or the California Consumer  
 13 Subclass..... 67  
 14 C. Claims Brought on Behalf of the Pennsylvania Subclass..... 79  
 15 REQUEST FOR RELIEF ..... 83  
 16 JURY DEMAND ..... 84

14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

## INTRODUCTION

1  
2 1. Watching videos, listening to music or other audio, videoconferencing, and playing games  
3 are key—indeed, indispensable—activities on modern personal computers (PCs). Indeed, it is no stretch  
4 to say that in 2022, a desktop or laptop PC that can’t play video or audio, or run videoconferencing  
5 software, or render a computer game, without experiencing intrusive stuttering, is unworthy of sale.

6 2. So, too, is a baseline level of hardware security—one recognized by Microsoft as  
7 necessary to mitigate the risk and effect of devastating firmware attacks—a central part of the baseline  
8 bargain expected by modern PC consumers. In a world in which virtually every aspect of an American’s  
9 life is performed at least in part through their computer, a desktop or laptop that is uniquely vulnerable  
10 to known, crippling attack vectors is not a computer that consumers seek to buy.

11 3. Yet Defendant HP Inc. (“HP”) makes, markets, and sells exactly these types of seriously  
12 flawed desktop and laptop computers. Numerous HP PCs—specifically, HP computers with AMD Ryzen  
13 or Athlon processors that have so-called “firmware TPM” (“fTPM”) modules embedded within them—  
14 include a design defect that causes invasive stuttering in audio and video playback, during  
15 videoconferencing, and while playing games. At the same time, this design defect renders these HP  
16 computers uniquely vulnerable to catastrophic firmware attacks—despite the fact that a TPM is, by its  
17 very nature, supposed to *defend* against such attacks.

18 4. HP, however, does not acknowledge any of this. Instead, on its website and elsewhere HP  
19 specifically markets its AMD desktop and laptop computers as especially suited for watching video, for  
20 videoconferencing, and for gaming. HP also touts these computers’ “enterprise-level” security.

21 5. The Plaintiffs in this case each purchased HP computers with AMD processors that  
22 include AMD’s defective fTPM design. They have all experienced severe stuttering in media playback;  
23 in videoconferencing; and/or in gameplay. Their computers are also uniquely vulnerable to firmware  
24 attacks that could compromise not just Plaintiffs’ HP computers, but potentially their home or business  
25 networks. The AMD fTPM design defect and its manifestations has significantly—perhaps totally—  
26 impaired the value of Plaintiffs’ HP PCs, as they are unfit for their intended use, and their resale value is  
27 crippled. Despite this—and despite growing complaints about the performance of AMD-based HP  
28

1 computers in HP forums and across the Internet—HP has done nothing to fix or replace its defective  
2 computers.

3 6. Plaintiffs and those similarly situated—*i.e.*, other persons who have purchased HP  
4 computers that include defective AMD processors—bring this lawsuit against HP in order to be made  
5 whole.

6 \* \* \*

7 7. HP designs, manufactures, and sells desktop and laptop personal computers. For almost  
8 all of the PCs it sells, HP incorporates central processing units (“CPUs”) from one of two manufacturers,  
9 AMD and Intel. On its website (hp.com) and elsewhere, HP touts its computers, including specifically its  
10 AMD-based PCs, as providing smooth playback of audio and video, videoconferencing, and gameplay.

11 8. HP also advertises and markets the security features of its AMD-based PCs, including  
12 their compliance with the security requirements of the leading PC operating system, Microsoft Windows  
13 11. HP preinstalls Windows 11 on most of its PCs.

14 9. HP advertises its AMD-based PCs jointly with AMD itself, including on pages and posts  
15 within hp.com that proclaim the benefits of AMD-based PCs made by HP.

16 10. HP is deeply involved with the design of its PCs, including as to the CPUs it incorporates  
17 into its PCs. HP’s AMD-based PCs, which include AMD Ryzen and Athlon processors, are designed and  
18 customized to fit the power consumption and use profiles suited for HP’s customers.

19 11. Put simply, HP and AMD work hand in hand to integrate AMD CPUs into HP PCs sold  
20 to end-users.

21 12. In June 2021, in response to a striking increase in so-called “firmware attacks”—  
22 devastating cyberattacks that allow an attacker to compromise low-level CPU, memory, and hardware  
23 resources of computer before an operating system even loads—the leading operating system maker,  
24 Microsoft, resolved to act. Specifically, Microsoft decided to require, as a precondition for running its  
25 upcoming operating system Windows 11, a specific piece of hardware designed to separate sensitive  
26 cryptographic and other security-related resources from the main CPU and system memory—a Trusted  
27 Platform Module (“TPM”).

# 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.