

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF FLORIDA**

**CASE NO. 19-81160-CIV-SMITH**

APPLE INC.,

Plaintiff,

v.

CORELLIUM, LLC,

Defendant.

**ORDER ON THE PARTIES' MOTIONS FOR SUMMARY JUDGMENT**

Plaintiff, Apple Inc. (“Apple”) designs and manufactures mobile communication devices, personal computers, and media devices, and sells a variety of related software, services, accessories, and third-party digital content and applications. iOS is Apple’s mobile operating system (or “OS”) for certain devices like the iPhone. iOS is publicly available online for free download from Apple’s servers as part of a packaged file. Around 2016 or 2017, Apple removed encryption from the kernel, which is the core of the operating system that has complete control over all system resources.

In 2017, Defendant, Corellium, LLC (“Corellium”) began developing a commercial product (“the Corellium Product”) that permits users to create tailored, virtual models of iPhones, using iOS files loaded by the user. (The Corellium Product also virtualizes Android, the mobile operating system used by Google, but the Android aspects of the Corellium Product are not issue in this case.) With its relatively limited functionality, among other things, the Corellium Product does not virtualize the Apple App Store, and users cannot make phone calls or use camera—features of interest to the average customer buying an iPhone off the shelf. According to testimony of developers of the Corellium Product, the product is intended to provide an environment in which technology security researchers can conduct research with features of interest to those researchers.

Still, there is no evidence that the Corellium Product, like other technology, cannot be used for unintended purposes, or that Corellium can control how users utilize any Corellium Product installed on their premises.

Starting in January 2018, Apple and Corellium began engaging in acquisition talks which, if successful, would have allowed Apple to acquire Corellium (including its people and the Corellium Product). During the acquisition process, there were several in-person meetings and calls between the companies. The Corellium Product was demonstrated (“demo’ed”) to Apple and there was technical due diligence. In the summer of 2018, the potential deal fell apart and Apple did not acquire Corellium.

On August 15, 2019, Apple filed this lawsuit alleging that Corellium infringed Apple’s copyrights in iOS and circumvented its security measures in violation of the federal Digital Millennium Copyright Act (“DMCA”). Corellium denies that it has violated the DMCA or Apple’s copyrights. Corellium further argues that even if it used Apple’s copyrighted work, such use constitutes “fair use” and, therefore, is legally permissible. Apple filed a Motion for Partial Summary Judgment [DE 470] and Corellium filed a Motion for Summary Judgment [DE 464]. For the reasons explained below, on the copyright claim, the Court finds that Corellium’s use of iOS constitutes fair use, and a genuine dispute of material facts precludes summary judgment on the DMCA claim. Thus, Corellium’s motion is granted in part and denied in part, and Apple’s motion is denied.<sup>1</sup>

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<sup>1</sup> To the extent the parties agree on the facts and the facts as stated are supported by the evidence, the Court may cite to the parties’ Statements of Material Facts (“SOF”). Regarding declarations, under the law of this Circuit, “[w]hen a party has given clear answers to unambiguous questions which negate the existence of any genuine issue of material fact [for summary judgment], that party cannot thereafter create such an issue with an affidavit that merely contradicts, without explanation, previously given clear testimony. Such an affidavit would be a sham.” *McCormick v. City of Fort Lauderdale*, 333 F.3d 1234, 1240 (11th Cir. 2003) (internal citation omitted).

## **BACKGROUND**

### **A. iOS: APPLE'S OPERATING SYSTEM**

An operating system is a program that manages the resources of the computer, allocating those resources to other programs as needed. It manages the computer's most basic functions, including the user's interaction with the device. iOS is Apple's operating system for its iPhone, iPod Touch, and until September 25, 2019, iPad. (Andrews Decl. [DE 470-4] ¶ 4.) The iPhone was introduced in 2007. It is one of the world's first "smartphones" and remains one of the most popular consumer electronic devices in the world. (Andrews Decl. ¶ 3.) For the iPhone, among other things, the ability to make phone calls, send text messages, take photos, and download apps from Apple's App Store are important features of iOS. (Def.'s SOF [DE 472] ¶ 3.)

iOS does not include hardware or some components of the secure boot chain (discussed below), like Boot ROM, which are built directly into the physical device. (Def.'s SOF ¶ 4.) However, iOS encompasses default software applications, underlying graphics, images, and files that help create the iOS displays, and graphical user interface ("GUI") elements installed on Apple's mobile devices. (Andrews Decl. ¶ 6.) Generally, GUI is a visual way of interacting with a computer using items such as icons and menus.<sup>2</sup> iOS also encompasses the source code and object code representing the processes managing the execution of applications and utilization of device resources.<sup>3</sup> (Andrews Decl. ¶ 6.)

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Additionally, the Court does not consider evidence that has been stricken pursuant to the Court's August 24, 2020 Order [DE 658] and the parties' related Joint Stipulation [DE 722]. Lastly, citations to the record primarily reflect sealed versions of the document, not the publicly available copies.

<sup>2</sup> <https://www.merriam-webster.com/dictionary/graphical%20user%20interface>.

<sup>3</sup> Regarding source code and object code:

iOS includes open and partially open source code; it includes code that was not written by Apple. (Marineau-Mes Dep. [DE 472-4] 37:6-14.) This includes: (1) open source code that Apple uses under license (e.g., Secure Socket Layer); (2) components for which Apple is the primary owner (e.g., WebKit); and (3) aspects where Apple contributes some of the code (e.g., the kernel). (Andrews Dep. [DE 472-3] 91:22-93:13, 100:20-23; Marineau-Mes Dep. 37:6- 40:11 (other open source components of iOS are the compiler and Swift).) Likewise, iOS' Darwin, which is part of the kernel, stems from research dating back thirty to forty years—long before Apple developed the iPhone. (Marineau-Mes Dep. 37:6-40:6.) For these open source components, Apple is key contributor to the code bases and, in many cases, invented the code and chose to make it available in open source. (Marineau-Mes Dep. 39:23-40:7.)

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Computers come down to one basic premise: They operate with a series of on and off switches, using two digits in the binary (base 2) number system—0 (for off) and 1 (for on). All data and instructions input to or contained in computers therefore must be reduced to . . . 1 and 0 . . . . Some highly skilled human beings can reduce data and instructions to strings of 1's and 0's and thus program computers to perform complex tasks by inputting commands and data in that form. But it would be inconvenient, inefficient and, for most people, probably impossible to do so. In consequence, computer science has developed programming languages. These languages, like other written languages, employ symbols and syntax to convey meaning. The text of programs written in these languages is referred to as source code. And whether directly or through the medium of another program, the sets of instructions written in programming languages—the source code—ultimately are translated into machine “readable” strings of 1's and 0's, known in the computer world as object code, which typically are executable by the computer . . . . All code is human readable. As source code is closer to human language than is object code, it tends to be comprehended more easily by humans than object code.

*Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 294, 306 (S.D.N.Y.), *aff'd sub nom. Universal City Studios, Inc. v. Corley*, 273 F.3d 429 (2d Cir. 2001) (internal citation omitted).

## B. IPSW FILES

Apple continuously releases new versions of iOS. It also releases at least some components of iOS in software files known as “IPSW” files. (Andrews Dep. 94:13-25; Krstic Dep. [DE 472-1] 126:13-127:21; Wang Dep. [DE 472-6] 59:24-61:10.) IPSW files are available online for free download from Apple’s servers, including via links provided on third-party sites like ipsw.me. (Def.’s SOF ¶ 6.) A user is not presented with or required to agree to the iOS Software License Agreement or End User License Agreement (“EULA”) before downloading an IPSW file. (Def.’s SOF ¶ 12; Andrews Dep. 95:13-15, 98:14-20.)

IPSW files have iOS without some of the runtime elements such as the cryptographic authorization ticket, which authorizes a given version of iOS to run in a given piece of hardware. (Krstic Dep. 126:13-127:21.) Further, many parts of the IPSW files are unencrypted, including the kernel, which is the core of the operating system that has complete control over all system resources. (Def.’s SOF ¶ 8.) Thus, once downloaded, a person can read some of the file contents, and it is possible to access contents of the kernel, as well as extract other parts of the file. (Krstic Dep. 67:12-21, 129:21-130:4; Marineau-Mes Dep. 57:2-10.) The kernel can run on non-Apple devices, but protections put in place by Apple—which intends for the kernel to run on Apple devices—makes it difficult to do so. (Krstic Dep. 130:23-132:13, 141-143:3.) The IPSW files also contain image files such as wallpaper. (Def.’s SOF ¶ 7.)

## C. APPLE’S TECHNICAL CONTROL MEASURES

Apple designs iOS and devices running iOS as an integrated hardware/software system. (Pl.’s SOF [DE 470-2] ¶ 10.) Apple does not provide the functionality to “clone” or copy the complete contents of an iPhone. (*Id.* ¶ 11.) Combining hardware, software, and service features, Apple has put security measures in place to protect its devices and customers’ experience. (Pl.’s

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