

How Technology Made A Copyright Law Obsolete

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Did you know that there are likely billions of unprotected IP works in nearly every consumer electronic sitting on your desk or held in your hand?

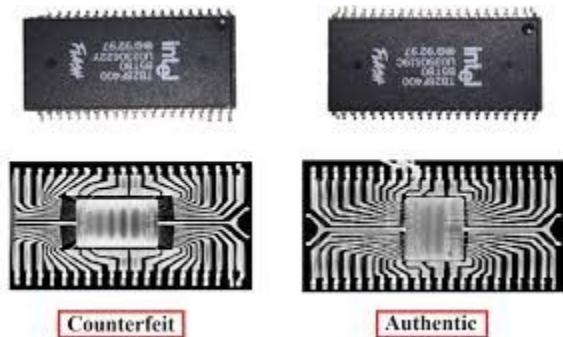
Today, it seems like every electronics device maker is announcing there are something like seven billion transistors on a single “chip” that measures just a few nanometers, just small enough to easily fit onto your thumb (and intended to be used in a light weight smartphone or similar device). These new chips have central processing units (CPUs to run the device), graphics processing units (for the visual aspects), and now additional units for machine learning and AI.

Technology like this has rendered the little-remembered “mask work” IP right essentially obsolete, which was a new right created by the Semiconductor Chip Protection Act of 1984 to protect the fabrication process for chips through the use of a “mask”. Back in the old days (of technology), the 1970s, there were only a small amount of “chips” powering these electronic devices, which took years to create, making their creators want some IP protection for all of that money and creativity spent on such designs.

At that time, some companies were trying to knock off the “mask” designs of these chips by reverse engineering them, and then selling them at a fraction of the price. This infringement fell outside the realm of patent law because these pirated designs were not protectable inventions, but rather designs etched onto the chips of already patented devices. But the designs also fell outside the scope of traditional copyright protection, because they were functional and not aesthetic. And trade secret protection failed as well once the design was introduced to the public. After much lobbying by the semiconductor industry, Congress settled on creating a new type of copyright for a “mask work” for these semiconductor designs. In 1984, Congress passed the Semiconductor Chip Protection Act (“SCPA”) and created an entirely new IP right, the first new IP right in 100 years. See 17 USC, Chapter 900.

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Yet, according to a study from 2012, there were only a little over 1000 mask works registered with the Copyright Office between 2008 and 2012, a fraction of the other types of IP works registered or granted during that time. (See “Copyright Registrations: Who, What, When, Where and Why”, Oliar, Patterson, Powell, Texas Law Review, Vol.

92:1225). Only one federal case, *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555 (Fed. Cir. 1992), ever analyzed the statute in detail and found a violation. *Brooktree* did uphold a substantial jury verdict under the SCPA, but only where there was a clear ability to compare the protected work and the infringing chip. Mask works have, in practice, proven to be a footnote to copyright law.

Technology simply moved too fast to make the SCPA relevant. Modern smartphones are a demonstration of why this IP right is obsolete. It would be technically impossible to reverse engineer the “mask” of a smartphone “system on a chip” containing seven billion transistors that fit on your thumb in the time necessary to merit an SCPA violation, which would be similar for virtually all of the chips in electronics these days. And even pirating a small portion of the design would be useless because the chips are so specialized to be used for a specific company or product that such a design would not be commercially viable. For that reason, the SCPA never quite found its audience.

Chip designers, however, are not without recourse under the IP laws. Many aspects of chips’ designs remain protected by patents, and have been litigated extensively over the years. And any piracy that concerned the industry would probably fall under trade secret law, given that most companies choose to keep designs and aspects of their processes secret. Relatedly, companies do not typically disclose their designs to the public under the SCPA, which is why there are so few mask work registrations. The SCPA appears to be destined for the dustbin of history.