



FENWICK & WEST LLP

Systems-on-a-Chip

Intellectual Property Protection and Licensing Issues

BY FRED M. GREGURAS (MAY 16, 1998)

I. Intellectual Property is an Important Business Asset

Systems-on-a-chip (“SOC”) intellectual property (patents, trade secrets, copyrights, trademarks) is an important business asset, both virtual components as well as complete devices. Customers, potential lenders and acquirors will look carefully at such intellectual property to determine if the company is a good potential business partner or investment.

Intellectual property is important for both defensive and offensive purposes. Offensive purposes are when someone else is using your intellectual property and you need to take legal action to protect your competitive position. Defensive is when a claim is made against you and an intellectual property portfolio can be used in trade; for example, for a cross-license, rather than pay a royalty or have your design freedom limited. A royalty bearing license may cause a product to be too expensive to be competitive. Patents in particular are used for strategic business purposes, both offensive and defensive purposes.

Owners of intellectual property rights in a SOC can be complicated. A single chip may require the intellectual property of multiple owners. A “system” will usually need both digital and analog circuitry, the intellectual property for which may be owned by separate owners. Companies need ownership of intellectual property or licensing rights to integrate all of these disparate functions.

Intellectual property provides the best opportunity for differentiation in the marketplace because the owner may exclude others or use such rights to bargain for other needed rights. At some point, a vendor may not implement the next stage of integration on a chip because of the lack of such rights. Ninety percent of an integrated solution is not enough. Owners of intellectual property are not required to grant licenses under U.S. law. Therefore, an intellectual property portfolio may provide the leverage to obtain cross-

licenses to obtain rights for such integration, and also encourages favorable settlements of disputes when the owner is allegedly infringing another parties’ rights.

II. Types of Intellectual Property

The primary U.S. intellectual property rights in virtual components and chips arise under patent law and the Semiconductor Chip Protection Act of 1984 (the “Chip Act”). Copyright law is also applicable for software on a chip. Patent and copyright protection are available on a worldwide basis while Chip Act type protection is not as widely available.

Patents

Patent law protects elements of chip designs, production processes and combinations of virtual components that are useful, novel and non-obvious. To be novel, a U.S. patent applicant must be the first person to invent the subject matter of a patent. A patent owner has the right to exclude others from making, using, selling, the claimed invention in the U.S. without a license. A patent owner is not required to grant any license.

Patents have a term of 20 years from the date the application is filed. Protection begins only when the patent issues. International protection must be implemented country-by-country with the Patent Cooperation Treaty providing a central processing point for international applications. Patents are considered the strongest form of intellectual property because independent creation is not a defense to an infringement claim. Patents are time-consuming and expensive to obtain, causing many companies to seek patent protection only for strategically important inventions.

Mask Works/Chip Protection Act

The Chip Act essentially protects the topology of mask works fixed in a chip. A work must be original and not consist simply of designs that are staple, commonplace or familiar

in the semiconductor industry or be variations of such designs combined in such a way that considered as a whole, they are not original.

Protection does not include any idea, procedure, process, system, method of operation, concept, or discovery, embodied in the mask work. An owner has the exclusive rights to copy, distribute and import chips incorporating the mask work.

Registration of a mask work with the U.S. Copyright Office must occur within two years of first commercial exploitation or protection will be lost. Protection lasts for 10 years from the earlier of (1) first commercial exploitation or (2) registration with U.S. Copyright Office.

In the case of a work made within the scope of a person's employment, as under copyright law, the owner is the employer for whom the employee created the mask work.

The Chip Act has proven to be a weak form of protection because of its very nature in protecting only the topology of a chip and its "reverse engineering" defense.

Copyrights

Federal copyright law protects software and other forms of expression from unauthorized copying, modification and distribution. Copyright protects only the way an idea is expressed, not the idea itself. A work need not be novel to be copyrightable, but it must be "original" in the sense that the expression was not copied from another source. For works created by individuals, protection lasts for the life of the author, plus 50 years. For works created by corporations, protection lasts for 75 years from first publication.

Copyright protection arises automatically when a work is created, but to obtain maximum protection, the copyright should be registered with the U.S. Copyright Office. Works have copyright protection in many countries automatically, without any need to register outside the U.S. as a result of numerous treaties. The scope of copyright protection varies from country to country.

Copyright protection is easier and cheaper to obtain and lasts longer than patent protection. However, unlike patent protection, copyright provides no defense if a competitor creates a similar work independently, that is without copying.

Trade Secrets

A trade secret is any device or information (such as a process, method of operation or material) that is used in a business and that gives the owner an advantage over competitors who do not know or use it. Trade secret protection requires that reasonable steps must be taken to protect the secret, such as limiting access to the secret and obtaining signed nondisclosure agreements from those to whom the secret is disclosed. No state or federal filings or registrations are required for trade secret protection. Independent development is a defense.

Trade secrets are protected primarily by state law. Therefore, the scope of protection varies from, even among states that have adopted the "Uniform Trade Secrets Act." Federal law protects trade secrets by authorizing criminal prosecution of those involved in the theft of trade secrets.

Trademarks

A trademark is any word, name or symbol that is adopted and used by a company to identify its goods in commerce and distinguish them from those manufactured or sold by others. Companies producing services use "service marks" in a similar fashion.

Trademarks can be protected under both state and federal law. As with copyrights, some trademark protection is established as soon as a mark is used and those rights will last as long as the mark remains distinctive and is not abandoned. However, to obtain the strongest trademark protection, trademarks should be registered in the U.S. Patent and Trademark Office. As with patents, trademarks must be registered in each country where protection is desired, although international treaties have multi-jurisdictional trademarks, such as the European Community Trademark.

Trademark registrations are more expensive and time-consuming than copyright registrations, but much less expensive and time-consuming than prosecuting a patent application. Unlike copyright, however, trademarks do not protect the expression embodied in a product, and unlike patents, trademarks do not protect any underlying invention.

III. Acquiring Intellectual Property

There are three basic ways to acquire intellectual property:

- Development by employees/consultants;

- Licensing the intellectual property from a third party (which is discussed in Section IV below); and
- Acquiring companies or assets such as the National Semiconductor acquisition of Cyrix.

Development by Consultants

The party having the development done must have a written consulting agreement with a specific assignment of intellectual property rights or the consultant may end up owning the intellectual property in the work. Fundamental consulting agreement provisions such as statement of work, schedule, deliverables also need to be addressed.

“Moonlighting” is an issue in terms of whether a consultant really owns what he develops. Warranties and indemnities are only as strong as the creditworthiness of the maker, so due diligence on a potential consultant is usually needed.

Development by Employees

“Employment Invention Assignment and Confidentiality Agreements” are required in high tech companies in the Silicon Valley and elsewhere. Frequent questions arise concerning what does an employer own and what can an employee do who is considering doing consulting or a start-up. State law, which varies state-by-state, defines the maximum limits of what an employer may own. Labor Code Section 2870 is the California position on this issue:

ANY PROVISION IN AN EMPLOYMENT AGREEMENT WHICH PROVIDES THAT AN EMPLOYEE SHALL ASSIGN, OR OFFER TO ASSIGN, ANY OF HIS OR HER RIGHTS IN AN INVENTION TO HIS OR HER EMPLOYER SHALL *NOT* APPLY TO AN INVENTION THAT THE EMPLOYEE DEVELOPED ENTIRELY ON HIS OR HER OWN TIME *WITHOUT* USING THE EMPLOYER’S EQUITY, INTELLECTUAL PROPERTY, SUPPLIES, FACILITIES, OR TRADE SECRET INFORMATION *EXCEPT* FOR THOSE INVENTIONS THAT EITHER: (1) RELATE AT THE TIME OF CONCEPTION OR REDUCTION TO PRACTICE OF THE INVENTION TO THE EMPLOYER’S BUSINESS, OR ACTUALLY OR DEMONSTRABLY ANTI-INTELLECTUAL PROPERTY-RELATED RESEARCH OR DEVELOPMENT OF THE EMPLOYER, OR (2) RESULT FROM ANY WORK PERFORMED BY THE EMPLOYEE FOR THE EMPLOYER. TO THE EXTENT A PROVISION IN AN EMPLOYMENT AGREEMENT PURPORTS TO REQUIRE AN EMPLOYEE TO ASSIGN AN INVENTION OTHERWISE EXCLUDED FROM BEING REQUIRED TO BE ASSIGNED UNDER CALIFORNIA LABOR CODE SECTION 2870(a), THE PROVISION IS AGAINST THE PUBLIC POLICY OF THIS STATE AND IS UNENFORCEABLE.

IV. Licensing Intellectual Property

General Principles

Under general principles of licensing law, any right not expressly granted to the licensee is reserved by the licensor. As a result, unless the licensee has been granted the express right to integrate a function into a SOC, it probably does not have the right to do so under an existing license agreement. Therefore, license agreements must be carefully and precisely drafted in order to obtain all required rights.

Key Provisions

The following are key provisions of license agreements:

- exclusive/nonexclusive rights—some rights can be exclusive while others are nonexclusive.
- geographical territory—rights can be separated. For example, manufacturing may be permitted in one location, but distribution could be permitted worldwide.
- duration—can also separate, for example, exclusive for a limited initial time period and nonexclusive thereafter with respect to some or all licensed activities.
- scope of rights—see below
- right of sublicense. The right to sublicense, which is often only reluctantly granted, also must be expressly granted or you don’t have the right. Sublicense rights are needed to grant others a license to a SOC which contains a third party’s intellectual property. This right is particularly important for cross-licensing purposes. A sublicense may only cover a subset of the licensed activities. Manufacturing, for example may be excluded. This means the licensee needs to go to a foundry that has a manufacturing license for the third parties’ intellectual property.

Scope of Rights License Issues

A licensee needs an express integration right in the license grant for SOC purposes. Another scope issue is whether a virtual component may be changed before integration. For example, can a subset of the core be used or can the virtual component be improved by the licensee?