

Lecture- 42



Law relating to semi-conductor layout and design

In today's dynamic and competitive environment, IP rights are key elements needed to maintain an edge in the market. It is crucial that the companies understand that what can be protected and how within their respective countries. The starting point of this intellectual property was the copyrights, trademarks and the upgrowing patents then came legislations covering industrial designs and geographical indications as important intellectual properties. With the growing technology and development and with the growing competition to become a high-tech country, a revolution in the field of Information Technology arrived. With the advancement of this information technology, a new branch in the field of intellectual property flourished, called as the Layout-Design or the of the semiconductor integrated circuits.

The semiconductor integrated circuit is an integral part of every computer chip. The fifth generation computers are using Very Large Scale Integration (VLSI) where numerous transistors are accommodated on a single chip, cutting down the size of the chip and at the same time increasing its processing power significantly. This ultimately translates into smaller and more powerful computers. Hence, the development of the layout-design on a semiconductor integrated circuit as an intellectual property is quite significant.

Hence, a step was taken by various organizations to pass regulations regarding this issue. One such was the World Trade Organization, and the result was the TRIPS agreement addressing the intellectual property related issues. India being a signatory of the WTO also passed an Act in conformity with the TRIPS agreement called the Semiconductor Integrated Circuits Layout-Design Act (SICLDA) passed in the year 2000.

"Semiconductor Integrated circuits Layout- Design Act 2000" is a supplement act to designs. It fulfills the obligations of TRIPS agreement (Art.35 to 38) regarding the protection of semiconductor integrated circuits layout- designs.

Definitions

SICLD Act defines the following as:

"Semiconductor integrated circuit" means a product having transistors or other circuitry elements, which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function.

"Layout-design" means a layout of transistors, and other circuitry elements and includes lead wires connecting such elements and expressed in any manner in a semiconductor integrated circuit.

"Commercial exploitation" in relation to the SICLD means to sell, lease, offer or exhibit for sale or otherwise distribute such semiconductor integrated circuit for any commercial purpose.

Need for Protection of IC designs:

Product life cycles in many industries are shortening. The length of time and amount of investment required, to obtain intellectual property rights, especially patents, can be disproportionate to the life of such product. Requirements such as the need to mark products with

"patent pending" also become impracticable when products have short life cycles and use many different technologies subject to different patents, especially when these products are miniaturized.

Protection under Patent or other IP Laws:

Integrated circuits comprises of numerous building blocks, each block being patentable. Since an integrated circuit contains hundreds or thousands of semiconductor devices, a claim to an integrated circuit would have to cover hundreds or thousands of individual elements. Consequently, a patent claim that attempts to describe an entire integrated circuit may be hundreds of pages long. Clearly, such a narrow claim would provide almost no protection. Even if one sought such narrow protection, writing a patent application supporting a claim with thousands of elements would be extremely complex, cumbersome, and expensive. Obviously, integrated circuits are not easily describable in a patent specification or the claims. Also, it may take several years to obtain an integrated circuit patent from most patent offices worldwide. This is unacceptable given that an integrated circuit's useful commercial life may be less than one year. The cumbersome, time-consuming nature of filing combined with extremely narrow protection often makes patent law an insufficient form of protection for integrated circuits.

Other forms of existing intellectual property protection are also inapplicable to integrated circuit layouts. Design patents protect the ornamental, but not the functional, aspects of an article of manufacture described in its drawings. Since integrated circuit layout is more functional than ornamental, design patent protection is generally inapplicable to integrated circuits.

Finally, trade secret law cannot be used to protect most integrated circuits because an integrated circuit layout may be reverse-engineered.

The layout of transistors on the semiconductor integrated circuit or topography of transistors on the integrated circuit determines the size of the integrated circuit as well as its processing power. That is why the layout design of transistors constitutes such an important and unique form of intellectual property fundamentally different from other forms of intellectual property like copyrights, trademarks, patents and industrial designs.

Given that patent, copyright, and trade secret law cannot adequately protect integrated circuit design, hence an exclusive protection for semiconductor integrated circuits layout-design has become necessary to the semiconductor industry.

History and Genesis of protection:

Ever since the early 1970s, chip pirates have quickly produced copies of semiconductor chips at vastly reduced prices by copying chip designs and avoiding the expensive research and development phase. This problem was particularly prevalent in the US where, until 1984, there was virtually no intellectual property protection for the IC layout, which cost millions of dollars to design and develop. As a result, the manufacturers of ICs sought some sui generis form of intellectual property protection for this backbone of modern technology.

Need For Sui Generis Protection:

The need for a sui generis form of protection developed primarily as a result of chip piracy,

which threatened to undercut the vitality of the semiconductor industry. Chip pirates could sell identical chips for lower prices than could the companies that originally designed them. This caused legitimate companies that engaged in chip research and development to cut prices to compete with pirated chips, which deprived legitimate companies of the funds needed to carry out further research and development to build the next generation of chips. Legitimate companies could not get adequate chip protection under patent, copyright, or trade secret law, so a sui generis form of protection was provided.

Economic importance and impact of this protection

Important economic, social, political and technological developments over the past few years have had a fundamental impact on how intellectual property is created, exploited and traded. The same is the case with "Semiconductor Integrated Circuits Layout-Designs".

What is protected?

A layout design expressed in any manner, which is original, which has not been commercially exploited for more than 2 years from the date of application for the registration, which is inherently distinctive and capable of being distinguishable from any other registered layout design, is protected or registered under the Act.

Who can apply?

The application for the protection of layout design can be made by the person who claims to be the creator of the layout design, his legal representative, a person registered in the prescribed manner as a layout design agent or a person in the sole and regular employment of the principal, in writing to the registrar in the prescribed manner.

The application can be filed either alone or jointly. The application has to be filed within the territorial limits that is a principal place of business in India of the applicant.

Procedure for registration

Filing of application in writing to the registrar in the office of SICLD registry in a prescribed form along with 3 sets of drawings produced to the plotter which describes the layout design and 3 sets of photograph of masks used for the fabrication of the semiconductor integrated circuits by using of the layout design or drawings which describes the pattern of such masks.

Acceptance of the application with acknowledgement by way of returning one copy of the application. The registrar can also withdraw the acceptance if the application is found to be prohibited for registration.

The application is advertised in a prescribed manner within 14 days of acceptance of layout design application. If any opposition is found to the registration, then a notice is sent to the registrar in the prescribed manner within 3 months from the date of advertisement. The registrar can call for evidences to be produced by both the parties and finally give his decision.

If the application is not opposed or the opposition has been decided in favor of the applicant, the registrar shall register the said layout design in the register of layout design and also issue a certificate sealed with the seal of the SICLD Registry.

Duration of Registration

The registration of the layout design shall be only for the period of 10 years counted from the date of filing an application for registration or from the date of first commercial exploitation anywhere in any country, whichever is earlier.

Exclusive Right to the Registered Proprietor

The registration of the layout design gives to the registered proprietor of the layout design the exclusive right to the use of the layout design and to obtain relief in respect of infringement. This right shall be available to the registered proprietor of that layout design irrespective of the fact as to whether the layout design is incorporated in an article or not.

Registered User

A person may be registered as a registered user of the layout design when the registered proprietor and the proposed registered user apply jointly in writing to the Registrar. The application shall accompany the agreement in writing or its authenticated copy, entered between the registered proprietor and registered user. The registered proprietor also has to submit an affidavit to the satisfaction of the Registrar.

Assignment and Transmission

A person who becomes entitled by assignment or transmission to a registered layout design shall apply to the Registrar in the prescribed manner to registered title. The Registrar on the proof of his title to his satisfaction register him as the proprietor of the layout design.

Protection against Infringement

The act of reproducing, selling, importing and distributing of integrated circuit layout design for commercial purposes constitutes infringement. Where such act is performed for the purposes of scientific evaluation, analysis, research or teaching shall not constitute the act of infringement.

Any person who commits infringement shall be punishable with imprisonment for a term, which may extend to 3 years, or with fine which shall not be less than fifty thousand rupees but which may extend to ten lakh rupees, or with both.

Adjudicating Authority

The Government of India appoints a person to be known as a registrar of the SICLD. He has both administrative and legal powers. Any person aggrieved by an order or decision of the Registrar may file an appeal to the Layout Design Appellate Board. The procedure and powers of the Appellate Board are that of a civil court as given under the Civil Procedure Code, 1908. If any person is not satisfied by any decision or order of the Appellate Board may file an appeal to the High Court within prescribed period and in a prescribed manner.

Convention Countries

Any country which accords to the citizens of India similar privileges and rights as granted to its own citizens, the Central Government may specify such country to be a convention country and provide the citizens of such convention countries the similar privileges as granted to citizens of

India under the SICLD Act. Where any country does not accord to the citizen of India the same rights in respect of registration and protection of layout design as it accords to its own citizens, the citizens of such countries shall not be entitled to be registered as a proprietor of layout design, assignee of the proprietor of a registered layout design or to be registered as a registered user of a layout design.

Highlights of Indian Legislation

- There is protection of semiconductor integrated circuits layout and designs by a registration process.
- There is a mechanism for distinguishing which layout designs can be protected.
- There are rules to prohibit registration of layout designs which are not original or which have been commercially exploited.
- Protection of 10 years period is provided to layout designs.
- Provisions regarding infringement and evidence of validity are mentioned.
- There are provisions for determining payment of royalty for registered layout designs in case of innocent or unintentional infringement.
- Penalties in the form of imprisonment and fine are imposed for willful infringement and other offences in the Act.
- The Registrar is appointed for the purpose of administration and the Appellate Board is established for facilitating the legal objective.

Conclusion

The SICLD Act fulfills India's obligation under the TRIPS agreement as approved by the members of WTO. The intellectual property protection for Integrated Circuit layout design is a key factor throughout the world, and more so in India because it does not have a strong intellectual property protection policy in software. As integrated circuit layout designs is in its early years in India, it's important that the country boosts of a strong protection policy right in the beginning itself and the SICLD Act provides such a strong protection policy.

The number of Indian companies focusing on integrated circuit design is beginning to grow and this would force major semiconductor companies to set up their offices and address the needs of the domestic market. This will encourage a lot more companies to base their operations in India.

The Indian legislation therefore provides a comprehensive protection to the layout designs of the semiconductor integrated circuits as recognized intellectual property and bundle of rights to the proprietor of the registered layout design.