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## Integrated Circuit Topographies

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**“Industrial Property” is a concept which pertains to the development and protection of human creativeness, inventions and original designs. All such activities are included in industrial property rights. The purpose of the development and protection of the said rights is to encourage the citizens to create their intellectual products in the most free and comfortable manner, to clarify the data for such products and guarantee the protection of the products, innovations, and technologies.**

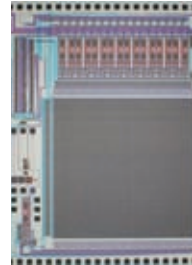
**This particular brochure has been prepared to present data for the integrated circuit topographies and the protection thereof. For further information, you may visit the web site of our institution. There included detailed information on guidance about application forms, legislation, fees etc.**

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**Nanotechnology is used in the production of integrated circuits. 1 nanometer is one billionth of the meter. 5 through 10 atoms can be composed within such a dimension.**

### **What is integrated circuit topography?**



The integrated circuits which are also known as chip, microchip, silicon chip, computer chip are the electrical circuits produced in nanometer dimensions. In general, they are made of semi-conductive, conductive and insulated layers. The Turkish law numbered 51047 describes the integrated circuit as any interim or end product integrated within and / or above the material pieces of any or all of the interim connections comprising of at least one active element. The view showing the three dimensional series of the layers forming the integrated circuit also forms the integrated circuit topography.

### **Why should it be protected ?**



Use of semiconductor technology in the production of electronic circuit elements and miniaturisation are the most significant developments of our time. Thanks to these developments, various electronic features can easily be added to the devices and tools which we make use of in our daily lives without altering the dimensions of the systems. While the simple computers in 1950's were dimensioned as much as a room, today we are able to proceed with any laptop computer at the level of gigahertz.

The integrated circuits are the most important components of these developments. The systems with electronic contents are becoming smaller and smaller day by day thanks to the placement of circuit elements such as millions of transducers, resistance, condensators etc within a chip of several centimetre square and thus their performance is upgraded although their dimensions remain to be the same.







### What are the difficulties in the preparation process of the integrated circuit topographies?



The integrated circuit design is the result of extremely costly scientific studies. The second greatest difficulty in designing the integrated circuits is the time to be expended for design works. It should be kept in mind that the design of the system which includes large amounts of elements may take years and years. What is more important than such difficulties, is the intellectual effort which lead our Institute to consider this particular matter. The design of the integrated circuit topography is a study which requires knowledge, education and experience. The dimensions of the elements to be placed within the circuit and their locations on the semi-conductive plates should be adjusted through accurate calculations. Under the light of aforementioned developments, protection of the integrated circuits (layout) that is to say the topography, has become an important requisite.

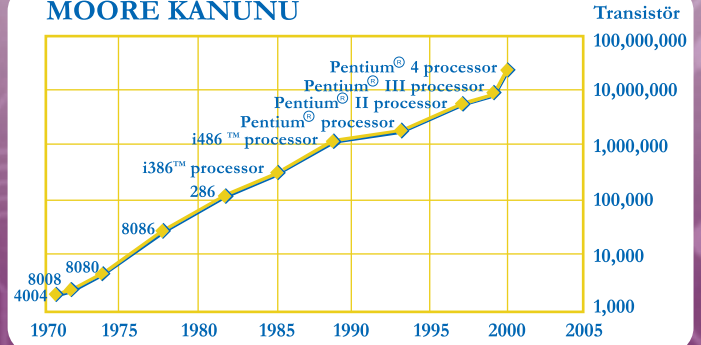
### What are the legal arrangements for integrated circuit topography?



Many of the industrial property offices, especially WIPO, have executed studies and furnished laws for the integrated circuits. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organisation which was signed by Turkey and the Decision of the EC-Turkey Association Council which secures the Customs Union, emphasise particularly the protection of the integrated circuits. Due to the reasons above, a law has been drafted for the protection of the integrated circuit topographies, which was revised through the comments made by the governmental agencies, ministries and universities. The law for the Protection of Integrated Circuit Topographies numbered 5147 was adopted on April 24, 2004 and come into force. The Regulation clarifying the Application of the Law for the Protection of the Integrated Circuit Topographies arranges the principles and procedures for such integrated circuit topographies. The Regulation was adopted in December 2004.

According to Moore theory, the number of transistors within the integrated circuit in each 18 months, is doubled and its prices decrease as years pass by.

#### MOORE KANUNU





**Any innovation in the integrated circuit may benefit from patent protection if it falls within the scope of invention.**

Thanks to such important steps taken in the field of integrated circuit topographies, the integrated circuits have been one of the industrial property rights as in the case of patents, trademarks, designs and geographical signs.

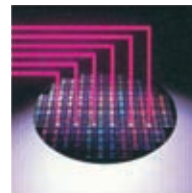
### **Who may apply for registration?**

The Turkish citizens, natural and legal persons dealing with industrial and commercial activities and residing in our country, and the persons having the right to file an application in accordance with the international agreements or reciprocity principle may apply for the registration of the integrated circuit topography. Those who are not residents of Turkey may only file an application through qualified patent attorneys.



### **What kind of integrated circuit topography may be registered and protected?**

One of the most important points to be taken into account in filing an application is the applicability of the integrated circuit topography, the contents of the topography, process duration system and techniques, on the information fixed to the topography other than the original topography. Consequently, except for the topography any innovation in the integrated circuit falls within the scope of invention, it may be the subject of the patent or beneficial model certificate or of the industrial design in the case of design development. In addition, any protection of the integrated circuit does not depend on whether the integrated circuit on any topography is used with any product or not. That is to say those dealing with design but not production may apply for registration.







### What is meant by original integrated circuit topography?

For the purpose of registration of any integrated circuit topography it should be original, that is to say, it should have been introduced as a result of the intellectual efforts of the designer and during design phase, it should not have been known by the integrated circuit producers and the designers of the integrated circuit topography. When the integrated circuit topography formed by the combination of known elements and interim connections is taken as a whole, if it is genuine in the way it is integrated, it may benefit from protection of the integrated circuit topography.

### What is the time frame for the protection of integrated circuit topography?

The initialisation of the protection provided for any integrated circuit topography is the date of introduction to the markets provided that application is made within two years from the date of introduction to the local or international markets by the holder or any third person with the consent of the holder, or if no commercial marketing is made, it is the date of the application. The period of protection is ten years from the date of commencement and it expires on the tenth calendar year. If, save as the cases which require confidentiality, the integrated circuit topography has not been used commercially and no application has been made to the Institute within 15 years from the date of design, no claim can be made for protection rights.

### Who holds the rights?

The rights arising from the protection of the integrated circuit topography belong to the designers or the employers in case it is designed through the tools and information made available in the place of business. However, rights on the integrated circuit topographies designed by the professors of the faculties and colleges of the universities belong to the professors.

**Today, integrated circuits are widely used in every field ranging from toys to traffic lamps. The micro processor in the birthday card with any melody has the capacity to proceed more than the big computers of the 1970's.**





**During application for registration, the drawings of the integrated circuits should be submitted to TPE, not the circuit itself.**

### How to furnish the application?

The application should include the following components:

- ▶ Letter of application
- ▶ Copy or clear drawings of the integrated circuit which include the information defining the electronic functions of the integrated circuits (The drawings are the copies or the clear drawings of the integrated circuit topography which include the information defining the electronic functions of the integrated circuits available for duplication for publication purposes. If the drawings and copies thus submitted are sufficient to define the integrated circuit topography, the drawings or the copies for the production of such integrated circuits do not need to be submitted. The large scaled drawings, plans and photographs should be folded in order to bring them into A4 norms. If this is not possible, the drawings should be rolled out but the dimensions of such rolls should not be thicker than 15 meters and larger than 1.5 meters.
- ▶ Abstract sheet concerning the integrated circuit topography. (The abstract includes the names used for the products defining the topography or comprising such topography together with the distinctive features of the integrated circuit topography which make it unique when compared with the other topographies. The abstract serves only as the presentation of the technical information and it does not influence the scope of the protection. Preferably, it may include 100 words. The block scheme, circuit scheme or such other drawings which may help to clarify the electronic functionality of the integrated circuit topography may be submitted.
- ▶ The receipt evidencing the payment of the application fee.
- ▶ Power of attorney in case the application is to be filed through an attorney. Circular (Specimen Signature) in case the application is to be filed on behalf of the legal persons.







### What are the procedures subsequent to filing application?



Upon receipt of the application for the integrated circuit topography by TPE, the necessary documents are first checked in order to finalise the application. If the documents are complete, the application date is finalised and the application is then to be examined in accordance with the provisions of the Regulation stipulating the Form of Implementation of the Law for the Protection of the Integrated Circuit Topography. Any application which is strictly complying with the requirements for filing an application is registered by the Institute notwithstanding the accuracy of the information provided in the Form of Application, the right of the Applicant to file an application and the originality of the integrated circuit topography. The registered "integrated circuit topography" is published in the Official Patent Bulletin and the certificate of registration issued by the Institute is forwarded to the applicant or the attorney in charge.

### Under which circumstances does the protection cease?

The right of protection granted for an integrated circuit topography shall be ceased in the case the ten-years protection period expires or the holder of the integrated circuit topography rights waives from such rights. In this case, the scope of the rights is deemed to be the public property by the time any of such expiration event occurred and this particular point is to be published in the Official Patent Bulletin.

