

Obtaining Protection for Mask Works in the U.S.

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I. Background

The U.S. mask work registration law was first enacted in 1984. Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 901-14 ("SCPA"). The SCPA was enacted in the early days of IC fabrication in response to certain identified acts of IC copying. However, until very recently, mask work registrations in the U.S. were generally thought to be of little commercial value because mere copying of IC masks (without knowledge of the fabrication processing) was thought to provide little if any competitive advantage. However, the appellate decision in Altera Corporation v. Clear Logic, Incorporated, 2005 Lexis 19284 (9th Cir. September 15, 2005) breathed new life into mask work registrations. In this case, the appeals court found that ASICs manufacturer Clear Logic infringed a mask registration of Altera in which the infringement related to the functionality and *** general *** design of the masks and corresponding programmable logic device ICs, as opposed to a more narrow copyright type of "copying" protection initially envisioned by the SCPA. Clear Logic's business was based upon receiving from a customer an Altera bit stream from Altera's chip design software and reverse engineering an ASIC from the bit stream that would replace the original Altera programmable logic device with a corresponding Clear Logic ASICs chip. It is clear from the opinion that the extenuating factor of Clear Logic's business model swayed both the trial court and the appellate court to accept a very broad scope of protection of Altera's mask work registration.

II. Mask Work Registrations

U.S. mask work registrations cover novel and non-obvious aspects of mask designs used to produce semiconductor ICs. Term of protection extends from date of registration to the end of the tenth calendar year after registration (a little over 10 years). Mask work registrations are only examined for formalities, and therefore issue relatively promptly.

IC chip mask work registrations cover's "mask works" which are defined as a series of images however fixed or encoded in which each image has the pattern of the surface of one form of the semiconductor chip product. The initial owner of the mask work under U.S. law (see 17 USC 901) is the employer of the person creating the mask work (which means that no assignment to the company is required, unlike with U.S. patents).

The mask work's exclusive right extends (see 17 USC 902) to the original aspects of the mask work that are not variations of commonplace or familiar designs.

III. Notice and Enforcement

Registered mask works marked with (1) "mask work"; "*M*" or the letter "M" enclosed in a circle and (2) the name of the mask work owner provide constructive notice. Enforcement is via U.S. district court for plenary relief and via an International Trade Commission proceeding (ITC) border enforcement (territorial exclusion). 17 USC 910 and 911. A presidential proclamation in 1996 extended U.S. mask work protection to applicants from all WTO countries.

IV. Registration Requirements and Procedure

The power to define regulations for registering mask works is ceded by statute to the Registrar of Copyrights, of the U.S. Library of Congress. 17 USC 908. The registrar prescribes use of form MW for mask work registrations, and a \$75.00 fee, per mask work registration. The Registrar defines requirements for submissions at 37 CFR 211 et seq. A mask work filing comprises at least: (1) Form MW, (2) payment for the fee, and (3) deposited mask works.

Form MW requires the following information:

Title: (for example the name of the corresponding IC product)

Nature of Deposit: (for example, "3 acetate sheets"; "3 photocopies of mask"; "2 ICs and 10 acetate sheets"). In this regard, acetate layers with opaque patterns have been used as actual chip mask. (It is unclear whether a paper photocopy would provide sufficient detail for small mask features.) The Deposit must be the most current form of the masks, subject to the following exceptions:

(1) an averment that the owner does not have access to the most complete form.

(2) owners of mask works in final forms of semiconductor chip products that are produced by adding metal-connection layers to unpersonalized gate arrays may separately register the entire unpersonalized gate array and the custom metallization layers. (Applicants seeking to register separately entire unpersonalized gate arrays or custom metallization layers should make the nature of their claim clear at Space 8 of application Form MW.) For these purposes, an unpersonalized gate array is an intermediate form chip product that includes a plurality of circuit elements that are adaptable to be personalized into a plurality of different final form chip products, in which some of the circuit elements are, or will be, connected as gates.

Owner information: name, address, citizenship

Date and Nation of first commercial exploitation: (of the actual chip produced from the mask work)

Nature of novel features: Brief description of novel features of the mask work, not otherwise common in the semiconductor industry.

V. Conclusion

Mask work registration is relatively inexpensive, quick, and appears to provide valuable protection.

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