

# Software Copyright - Protection for Programs Embedded in Silicon Chips

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Since the amendments to the *Copyright Act* in 1984, it has not been clear whether computer programs embedded in silicon chips ROM (Read Only Memory) are protected. On 9 October 1990 Davies J, in the Federal Court decision of *Star Micronics Pty Limited and Anor v Five Star Computers Pty Limited and Ors* ((1990) AIPC 90-717) clarified the position. His decision is the first decision in Australia on this subject since the 1984 amendments. This article explores aspects of the decision, the question of infringement of copyright by importation and issues which require consideration under the *Circuit Layouts Act 1989*.

## *The Facts*

Star Micronics Pty Limited ("Star Australia") is the exclusive distributor in Australia appointed by Star Micronics Co Limited ("Star Japan") of the Star NX1000 Printer ("the printer"). The printer is supplied by Star Japan to Star Australia with a 240V power supply. Star Japan supplies the printer for sale in Japan and other places with a 220V power supply.

All Data Australia Pty Limited ("All Data") imported from Hong Kong the printer with a 220V power supply and supplied the printer to a distributor Five Star Computers Pty Limited trading as Computerfair (Computerfair) which retails computers and computer products. Computerfair had previously been a sub-licensee of Star Australia and had sold a number of printers supplied by All Data at prices that may have been less than the prices at which the printers are sold. A program written by an employee of Star Japan was stored in the ROM contained in the printer. That program was stored in object code which is the machine readable form of the source code and consists of electrical charges in the cells of the ROM.

Expert evidence that the ROM contains "a computer program which is used to provide instructions to the micro processor or CPU, which controls the operations of the printer" (page 12 of the Reasons for Judgment) was given by Dr Forward at the hearing. Various issues were considered and are discussed below.

## *Does the Printer Contain a Computer Program?*

Since the 1984 amendments to the *Copyright Act*, computer programs are protected as "literary works". Section 10 of the *Copyright Act* provides:

"'Computer Program' means an expression in any language, code or notation, of a set of instructions (whether with or without related information) intended, either directly or after either or both of the following:

- (a) conversion to another language, code or notation; and
- (b) reproduction in a different material form,  
to cause a device having digital information capabilities to perform a particular function."

The Reasons for Judgment do not give a detailed description of the computer program involved in this case. However, it appears from the evidence of Dr Forward that what is contained in the ROM is a computer program within the definition in the *Copyright Act*, namely, the expression in object code of a set of instructions intended to cause a device, the printer, to perform a particular function. Without a detailed description of the computer program in question it is not possible to analyse Dr Forward's evidence.

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The decision is the first statement by the Courts which extends copyright protection for computer programs in object code contained in ROM. Prior to the 1984 amendments the High Court had held that there was no protection for computer programs in object code. Davies J said:

"In the High Court, it was held by Gibbs CJ, Brennan and Dean JJ, Mason and Wilson JJ contra, that the ROM there under consideration was not a reproduction or adaptation of a source program. Gibbs CJ and Wilson JJ also held that the program in the ROM did not constitute a literary work." (Page 11 of the Reasons for Judgment)

In rejecting Computerfair's submissions that

"... the ROM, which stored the electrical impulses, did not contain a computer program as defined in S.10(1) of the Act"; and

"... the ROM was a mere adjunct to a mechanical contrivance and therefore not the subject of copyright." (Page 13 of the Reasons for Judgment).

Davies J found that:

"... the program in the ROM meets the description of a 'computer program' in S.10(1) of the Act ... "

for the reasons set out above.

### ***Copyright Infringement by Importation***

The claim against Computerfair was that it sold without the licence of Star Japan the printer comprising the ROM which contained within it the computer program the subject of copyright, with the knowledge that it had been imported into Australia by All Data. The relevant provisions of the *Copyright Act* are set out at page 5 of the Reasons for Judgment as follows:

"38(1) The copyright in a literary, dramatic, musical or artistic work is infringed by a person who, in Australia, and without the licence of the owner of the copyright:

- (a) sells, lets for hire, or by way of trade offers or exposes for sale or hire, an article; or
- (b) by way of trade exhibits an article in public,

where, to his knowledge, the making of the article constituted an infringement of the copyright or, in the case of an imported article, would, if the article had been made in Australia by the importer, have constituted such an infringement."

Other relevant provisions are:

"31(1) For the purposes of this Act, unless the contrary intention appears, copyright in relation to a work, is the exclusive right:

- (a) in the case of a literary, dramatic or musical work, to do all or any of the following acts:
  - (i) to reproduce the work in a material form;
  - ...
  - (vi) to make an adaptation of the work;
  - (vii) to do, in relation to a work that is an adaptation of the

**"computer programs contained in silicon chips are protected by the Copyright Act"**

first-mentioned work, any of the acts specified in relation to the first-mentioned work in sub-paragraphs (i) to (v), inclusive;

"... 36(1) Subject to this Act, the copyright in a literary, dramatic, musical or artistic work is infringed by a person who, not being the owner of the copyright, and without the licence of the owner of the copyright, does in Australia, or authorises the doing in Australia of, any act comprised in the copyright."

Star Japan was able to prove that it was the owner of the copyright subsisting in the computer program contained within the ROM, as the program was written by its employee in the course of his employment and because the author was a "qualified person" within the meaning of Section 32 of the *Copyright Act* (see page 7 of the Reasons for Judgment).

Infringement was established as Davies J accepted that if the computer program had been made in Australia by All Data, the making of it would have constituted an infringement of the copyright (see Section 36(1) *Copyright Act*).

### **Implications**

There are two commercial implications raised by the decision:

1. Computer equipment comprising ROM embedded computer programs in object code can obtain de facto protection by the law of copyright to the extent to which the computer equipment requires the ROM in order to function. Manufacturers of computer equipment might protect their equipment by including within it a silicon chip which contains a computer program necessary for the equipment to function: and
2. The importation into Australia of computer equipment containing computer programs stored in object code in ROM, without license from the owner will cause difficulties. The distribution or supply of that computer equipment will constitute an infringement of the copyright of the owner of the computer program.

### **Circuit Layouts Act**

On 1 October 1990 the *Circuit Layouts Act* was proclaimed and provides that where an eligible layout is commercially exploited in Australia or elsewhere, a person who acquires a legitimate copy of the layout from the original exploitation may himself commercially exploit the copy or the integrated circuit made from the copy in Australia without infringing any of the rights (known as EL rights) of the layout (Section 24(1)). Accordingly, Australian copyright owners do not enjoy protection from parallel importation, otherwise afforded by Section 37 or 38 of the *Copyright Act* in respect of copyright works. Indeed, there is a specific statutory exemption to Sections 37 and 38 of the *Copyright Act* in allowing importation of integrated circuits within which are embedded copyright works, so long as the resulting commercial exploitation is not an infringement of the EL right in a layout under Section 24(1) and 24(2).

Section 24(2) refers to "an integrated circuit containing a copy or an adaptation of a work" and provides that where commercial exploitation of the integrated circuit is not an infringement of the Act, then such commercial exploitation shall not be an infringement of the copyright in the work embodied in it, unless the making of the copy or an adaptation was itself an infringement. This would appear to allow the parallel importation of a computer program stored in an integrated circuit which enjoys protection under the *Circuits Layouts Act*. Owners of copyright in computer programs stored in ROM as opposed to stored on tape or disc may have their protection from parallel importation taken away if that ROM is part of a protected integrated circuit.

## **Conclusion**

Computer programs contained in silicon chips are protected by the *Copyright Act*. The computer industry must be cautious when importing into Australia any computer equipment containing computer programs unless the ROM is, or forms part of an "integrated circuit" protected by the *Circuit Layouts Act*.

# **Computer Crime: The Liability of Hackers**

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One of the negative features of the emergence of computers has been the inevitable development of "computer crime". Whilst there are many crimes which can be committed with the aid of computers, one of the most prevalent and potentially most concerning is the increased incidence of unauthorised access to computer systems. Because of deficiencies in traditional criminal laws, new legislation has been enacted or contemplated in all Australian jurisdictions, although the approaches adopted by the various States are far from consistent. This article examines the way in which the law has adapted to regulate the crime of unauthorised access.

## **Introduction**

The advent of the computer age has given rise to many unique legal problems in a diversity of areas. These areas include intellectual property, taxation, privacy, contracts, insurance and crime. Within the area of crime alone, a number of further issues have arisen. Is it "forgery" to copy computerised information? Is it "deception" to extract funds from an ATM without authority? Is it a criminal offence to gain unauthorised access to someone else's databank? This article will concentrate on the last of these issues - the criminal liability of hackers who gain unauthorised access to computer systems.

The criminal law has experienced considerable difficulty in keeping up with the computer revolution. Persons can engage in conduct which was inconceivable a century ago and, as a result, many traditional laws are simply ill-equipped to deal with the situation. It follows that activities which might be regarded as socially objectionable will not be classifiable as criminal offences unless specific legislation is introduced to deal with them.

There are a number of examples of difficulties courts have experienced in attempting to bring unauthorised accessing of computer systems within the ambit of traditional criminal laws.

## **Theft**

It might be thought that the unauthorised extraction of confidential information from a computer system should be regarded as "theft". There are two problems here, however. First, "theft" is a concept which can only be applied to "property", and it has been held that intangible information is not classifiable as "property" for the purposes of the criminal law (*Oxford v. Moss*).

Secondly, "theft" requires an intention to permanently deprive, and even if electronic information were classifiable as "property", it would be difficult to establish that a hacker intended to deprive the rightful owner of it: the rightful owner would still possess the information, even though it had been viewed and perhaps copied by the intruder.

## **Electricity Offences**

Each of the States has a statute which creates an offence of "theft of electricity". These provisions were introduced because the unauthorised extraction or diversion of electricity would not, under traditional laws, amount to "theft" - "electricity" could not be regarded as "property". It has been argued that by

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