

# ***STD 95/2 - Tax-advantaged computer programs:permanent and non permanent microchips in mobile telephones***



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This Document is a Ruling for the purposes of section 77 of the *Sales Tax Assessment Act 1992*. As a result you may act on it as if it had the force of law.

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## Sales Tax Determination

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Title: Tax-advantaged computer programs:

- permanent and
- non permanent microchips

in mobile telephones

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### Background

The Sales Tax Law provides that goods which incorporate a *tax-advantaged computer program* may have their taxable value reduced by the value of such a program. A *tax-advantaged computer program* is one that is not embodied in a *permanent microchip*.

Many different types of microchips are currently used in mobile telephones sold in Australia. To assist taxpayers establish whether their product may qualify for the concessional sales tax treatment, the Australian Taxation Office (ATO) has recently sought and received advice from computer engineers about which of the microchips used in mobile telephones are:

- *Permanent microchips* designed to have computer programs embodied in them on a permanent basis; and
- Non permanent microchips designed to have the programs on them *erased or replaced*.

The purpose of this Determination is to make the results of this advice publicly known. This will assist taxpayers who manufacture, import or sell mobile telephones to establish whether they need to seek a ruling on the value attributable to the computer programs embodied in their mobile telephones.

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**Issue**

Which of the various types of microchips currently in use in mobile phones are *permanent* and which ones are non permanent?

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**Decision**

The following memory devices commonly found in mobile telephones are *permanent microchips*:

- **Read Only Memory (ROM) including Programmable Read Only Memory (PROM)**
- **One Time Programmable EPROM (OTP EPROM)**

The computer programs contained in these microchips are not tax-advantaged for the purposes of section 14 of the *Sales Tax Assessment Act 1992* ('STAA').

The following microchips are considered to be non permanent and computer programs embodied in them will be tax advantaged:

- **Erasable Programmable Read Only Memory (EPROM)**
- **Electrically Erasable Programmable Read Only Memory (EEPROM)**
- **Flash RAM**
- **Battery Backed RAM**

Note that, at the time of the taxable dealing, there are no programs stored in RAM (other than flash RAM and battery backed RAM).

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**Date of effect**

Except in respect of OTP EPROMs this determination is effective immediately. If any person has been acting on the basis that OTP EPROMs are not *permanent microchips* they have until 3 April 1995 to comply with this determination.

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**Reasons**

A *permanent microchip* is defined in section 5 of the STAA to be one which is designed to have computer programs embodied in it on a permanent basis, being a microchip that does not allow the *erasing or replacing* of the computer program originally embodied in it.

Based on the ordinary meaning of the word, *erasing* is considered to be the deleting of a computer program from a storage or memory device. In practice, in a computer context, it would be the act of setting all, or a group, of memory cells to a common state to allow the cells to be reprogrammed.

*Replacing* is the act of putting a new computer program into a memory element in place of the computer program originally embodied on it.

*Permanent microchips*

The following memory devices commonly found in mobile telephones are considered to be *permanent microchips* for the reasons given:

**Read Only Memory (ROM) including Programmable Read Only Memory (PROM)**

The computer programs originally embodied during the manufacturing process in these memory devices cannot be erased or replaced.

**One Time Programmable EPROM (OTP EPROM)**

Once an initial program is embodied in the OTP EPROM it can be electrically altered by changing selected 1's in the binary code to 0's. Exposure to ultra violet light will set the 0's back to 1's thereby erasing the program but the OTP EPROM has no window to let in UV light. Although the binary bits may be altered, or the program ruined or destroyed, the microchip is designed to have the original program embodied in it on a permanent basis. It does not allow the program embodied in it to be erased and a new one inserted in place of it.

*Non permanent microchips*

The following devices are designed to have the computer programs originally embodied in them erased or replaced. Therefore, they are considered to be non permanent microchips and the computer programs embodied in them will be tax advantaged:

**Erasable Programmable Read Only Memory (EPROM)**

The memory in an EPROM can be cleared by exposure to ultra-violet light through a window in the microchip. Once cleared programs can be electrically re-written.

**Electrically Erasable Programmable Read Only Memory (EEPROM)****Flash RAM****Battery Backed RAM**

The memory in an EEPROM, flash RAM and a battery backed RAM can be cleared and replaced electrically.

**Communication  
of the Decision**

This determination is a public ruling for the purposes of section 77 of the *Sales Tax Assessment Act 1992* and may be relied upon by any person to whom it applies. It will be mailed directly to manufacturers, importers and wholesalers of mobile telephones who have registered with the ATO, and made available to relevant Industry Associations.

**Commissioner of Taxation**

16 March 1995

**Related Determinations:**

Related Rulings: Draft Ruling SST 2 on Taxable Value

Subject Ref: tax advantaged computer programs; permanent and non permanent microchips in mobile telephones

Legislative Ref: STAA 5; STAA 13; STAA 14

Case Ref:

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