A Guideline to Reliably Read the Version ID Register of CH7006/7013

Description of Problem

When a CH7006 or CH7013 is powered down, its version ID is possibly retrieved incorrectly and may come out the ID as its Macrovision counterpart's. This causes that without a special precaution in the software driver, the non-Macrovision chips may penetrate the Macrovision protection.

Solution to the Problem

In order to acquire the correct version ID for the CH7006 or CH7013, the chip should be in active status before the version ID register is accessed. Therefore, the following is the suggestion to the software drivers which involve Macrovision/non-Macrovision pairs of CH7005/CH7006 and CH7004/CH7013:

when the above TV encoder chips are sleeping (in power-down mode), the chips have to be waken up first, that means they should be powered up first. In order to discriminate CH7006 from CH7005, or CH7013 from CH7004, the VID (Register 25h) should be read and checked.

The programming sequence should be as follows:

When a DVD with Macrovision protection is to play:

(1) Read Register 0Eh;
(2) Check if the last 3 bits of the register (PD[2:0]) is 001 or 1xx, if not, the chip is already active, then go to (4);
(3) Write Register 0Eh with 0x0b (Software reset and power CH7005/6 or CH7004/13 up);
(4) Read Register 25h;
(5) If the value is 0x2a (it is CH7006 non-Macrovision chip) or 0x22 (it is CH7013 non-Macrovision chip) , then stop DVD play;
(6) If the value is 0x3a (it is CH7005 Macrovision chip) or 0x32 (it is CH7004 Macrovision chip), let it play.

Remarks

The Version IDs (in Register 25h) of the above chips are listed as follows:

CH7005C	**0x3A**
CH7006C	**0x2A**
CH7004C	**0x32**
CH7013A	**0x22**