



Policy Statement on Use of Content Protection for Recordable Media, (CPRM) in Certain Applications.

Introduction:

Content Protection for Recordable Media (CPRM) is a technology developed and licensed by the "4C" group -- Intel, IBM, MEI (Panasonic) and Toshiba -- to allow consumers to make authorized copies of commercial entertainment content where the copyright holder for such content has decided to protect it from unauthorized copying. CPRM is designed specifically for, and has been applied to, various portable data storage media types, including DVD formats, SD Memory Cards, and most recently, CompactFlash and IBM Microdrive™ media. A primary strength of CPRM is enabling protected interchange of stored content among different devices such as between portable players manufactured by different companies. Therefore, CPRM is suited for use with removable or portable data storage media and is neither licensed nor applicable for generic fixed hard disk drives.

Where used, CPRM does not act as a "gate" to the storage medium. It does not prevent the storage of data. Rather, CPRM provides a method for the host device or application (such as a portable audio player or digital audio jukebox software) to encrypt selected data before it is stored and then to decrypt it for playback. Building in CPRM support is optional for manufacturers. CPRM protection will not be used for most types of data. It is licensed for use in protecting commercial entertainment content (e.g. copyrighted music downloaded in protected form). Thus, CPRM enables new, additional uses for the storage media without impinging on already established uses.

Aside from encryption of the data, CPRM protected files are ordinary files, identical to other files in all respects. They can be freely erased, moved, defragmented, backed up, etc. However, because their data are encrypted with a key that is specific to the original medium, they will be useful as long as they remain on (or are restored from a backup to) that original medium. This is necessary to prevent unauthorized copying of the protected data.

CPRM adds a Media Identifier and Media Key Block (MKB) to the media. A standardized command interface, such as in the ATA specification, would permit any CPRM-enabled host device or application to robustly read the Media Identifier and MKB to enable playback. The rest of the command interface for CPRM-enabled devices is the same as other devices: Data are read or written using existing commands. Encryption and decryption are performed by the host device or application.

See Questions & Answers on next page.

Questions & Answers

Q. What is CPRM licensed for?

A. CPRM is licensed for protecting commercial entertainment content copied on to portable data storage technologies, technologies such as SDcards, CompactFlash(TM), Recordable DVD media and the IBM Microdrive(TM) in the CompactFlash physical form factor.

Q: When will CPRM be available?

A: CPRM specifications and licenses are available now for all supported media from the 4C web site: www.4c-entity.com.

Q. The CPRM specification emphasizes "portable" ATA devices. Can this technology be used for fixed hard drives?

A. CPRM is not applicable to or licensed for use on generic fixed hard drives. CPRM is designed to allow portable media to interoperate among different media players and recorders.

Q. Will CPRM be added to the ATA standard?

A. No. 4C is asking the ATA committee to create a generic copy protection command that enables communications with copy protection applications. ATA has 256 possible commands and commonly designates some of them to enable specific functions.

Q: Will CPRM affect file systems and defrag programs?

A: No. The media key block does not have to be at a fixed location. It is outside of the addressable sectors, so it is transparent to operating systems and disk defragmentation. In this respect, it is like the hardware error logs that are already written on the media.

Q: Doesn't CPRM prevent backup?

A: No. CPRM is transparent to non-protected files, so data can be backed up and restored normally. Protected files are also just files, so backup copies (playable only when restored to the original media) can be made.