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TECH b•e•a•t

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# A Small Matter of Size

*Following a lengthy investigation, officers armed with a search and seizure warrant enter the residence of a suspected offender. As part of their search, the officers begin collecting every potential source of electronic evidence. They pack up the computer tower, the keyboard, and the apparently unburned CD-ROMs still on their packaging spindle. But they do not take a tiny black plastic square, smaller than a postage stamp, tucked halfway underneath a coffee cup. The officers unfortunately do not recognize this small object as a memory card-as THE memory card that would seal their case.*

"Physically, memory storage cards are getting smaller and smaller, while virtually, they are getting larger and larger," says Joshua Bartolomie, an electronic crime specialist at the National Institute of Justice's CyberScience Laboratory (CSL) in Rome, New York. "Cards the size of a postage stamp can hold up to three times the information stored on a CD-ROM." In his search and seize warrant scenario, Bartolomie points out that the "little black thing on the corner of the desk" could easily be hidden by a knickknack, or even mistaken for one.

To help law enforcement officers recognize these multimedia storage devices for what they are, CSL staff have developed a desktop reference card that depicts 11 miniature memory cards commonly used in cell phones, personal digital assistants, MP3 players, laptops, desktops, and digital cameras. These cards can store any type of data, including, but not limited to, audio, pictures, video, and documents. Two of the products pictured on the desktop reference card, TransFlash™ and eXtreme Digital (XD), are only half the size of a postage stamp, yet may hold up to a gigabyte of information.

"This technology industry is already talking about new media cards to be out by this summer that are even smaller and hold three times more information," Bartolomie says. Because technological advances occur at such a rapid pace, CSL plans to update its reference card several times a year.

In addition to overlooking or ignoring the tiny cards themselves, Bartolomie says officers may not realize that memory cards used in devices other than computers, such as MP3 players or digital cameras, can store any type of file. "A lot of people think if you have an MP3 player that it just plays music," he says. "You can store anything on that card; the computer just sees it as another logical drive. You can save files to the memory card through a card reader/writer or by using the device that the card is contained within."

Officers also may not know all the places in a computer system that can "hide" a memory card. In another scenario Bartolomie uses in training sessions, he asks his class if they would take the mouse when seizing a computer as evidence; most say no. However, because many laptop users do not want to carry both a mouse and a card reader, the computer industry has created models that include built-in memory card readers/writers. Criminals have managed to turn a space-saving innovation into a way to hide evidence from the eyes of the law, he says.

***For more information regarding the identification of multimedia storage cards, contact Joshua Bartolomie, 888–338–0584 or joshua.bartolomie@rl.af.mil. To obtain the reference card "Multimedia Storage Devices," or other reference cards in the CyberScience Laboratory Desktop Reference Card Series, go to www.cybersciencelab.com. [Note: You will need to register for the Private Site in order to complete download.] Print copies are available also by calling 888–338–0584.***

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