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The "Spy Chip"

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Radio Frequency Identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be attached to or incorporated into a product, animal, or person for the purpose of identification using radio waves. Chip-based RFID tags contain silicon chips and antennas.

There are two types of RFID tags. They are passive tags and active tags. The passive tags do not require an internal power supply, which means they can be very small. The smallest passive chip measured 0.15 mm × 0.15 mm, and is thinner than a sheet of paper. The lowest priced passive chip is available today for a cost of five cents each. These in particular are used by stores such as Wal-Mart and Target. Most of the passive tags signal by backscattering the carrier signal from the reader. Active tags have their own internal power source and the ability to transmit at higher frequency levels, which make them much more reliable. They are also more reliable in wet environments. Humans and animals are mostly made up of water; therefore active tags would be used for implants.

There are many current uses today for radio frequency identification. Passports will contain all the ordinary visual information along with a digital photo of the individual owning the passport. The first RFID passports were issued in Malaysia in 1998. They were called e-passports and also recorded information regarding travel history time, date, and place of entries and exits from the country. Transport payments are used for electronic toll collection. Some may be placed on cars so that they can pass through

the toll booths without stopping. The chip will have a prepaid balance on it. Companies of all sorts, including clothing stores, libraries, etc. are using RFID tags to track inventory. Do you have a set of car keys that include a chip? That is an RFID chip which helps prevent car theft. The car will not start without the correct RFID chip. Here's one even better. You know those little gadgets some people use to lock and unlock their car doors by pushing a little button? Those little gadgets have an RFID chip in them. Some even give the option of starting the car by pushing another button. Some are using the RFID technology for animal identification. Cattle ranchers are using RFID to keep track of their herd. This also helps packing companies who have to condemn a carcass because of disease. If one cow is infected, maybe others from the herd are also. The packing company can track the cow back to its original owner, due to the information stored on the RFID chip. RFID enabled cards, such as SmartCards, are being used for electronic cash. The RFID tracking technology is being used in some US prisons to keep track of inmates. The tiny chip is placed in a wristband and worn by the inmates. This keeps them from trying to escape along with recording their whereabouts in the prison. This particular RFID enabled wristband will send off an alarm if the inmate tries to remove it.

There are so many uses for RFID, but my main concern is human implants. The chip implanted in humans can hold a variety of information including the individual's, banking information, name, address, phone number, social security number, credit card numbers, medical records, driving records, etc. The list can go on and on. Potential usage includes, patient identification, replacement of barcodes, microwave dinners, and so on. Are humans really going to be replaced with computers?

Radio Frequency Identification is a new technology based on a tracking system that is rapidly spreading. This new technology is definitely amazing, but how is our individual privacy protected? This is the question amongst many Americans. Radio frequency identification is definitely a controversial issue. Many people are worried about their privacy along with the risk of identity theft. As long as computers have been around someone has found a way to crack, hack, and steal information. Why should this case be any different? Can we protect ourselves against RFID interception? Another concern would be the religious aspect. Some people are claiming that having a chip implanted in your hand that stores all your identity information on it, is the mark of the beast.

In my research I have found many current event articles on what is happening in the world concerning radio frequency identification. In October of this year, CASPIAN (Consumers Against Supermarket Privacy Invasion and Numbering) is recalling millions of RFID-equipped contactless credit cards due to security flaws reported in the New York Times. These particular credit cards are RFID equipped without the knowledge of the consumer and can be read easily by unauthorized users using equipment that can be assembled for less than \$50. They state that not only can this hurt consumers, but also cause a financial disaster for the credit card company itself.

Tommy Thompson who is the former U.S. Secretary of Health and Human Services and who currently holds a position on the Board of the VeriChip Corporation is considering a run for president in 2008. Mr. Thompson believes that all Americans should be implanted with radio frequency identification chips even though he is yet to get implanted himself. Is this someone we want to be president? Not! This is

supposed to be a free country! Where is my freedom of choice going to be if in the future it is by law required for me to be implanted with an RFID chip?

A Cincinnati video surveillance company titled CityWatcher is requiring that any employee who works in its secure data center to be implanted with the VeriChip, which has been proven to have security flaws. CityWatcher is the company that provides video surveillance throughout the streets of Cincinnati.

Some businesses are jumping on this new technology to keep track of products. One particular company, Marks & Spencer, have extended the use of RFID chips in their stores. Marks & Spencer claim that this particular technology will help them stay accurate with inventory. They state that the chip will be placed in the removable price tags on their clothing. Although, I feel this may be a good thing for the store, I am also concerned about the consumer. What I wonder is can these particular chips be used as a stalking device? Can someone use this technology to trace a particular individual? They say they are placing the chip in the removable price tag, but what if that changes to where the chip is actually embedded into the fibers of the clothing? If the wrong individual finds a way to use this technology for stalking purposes, will they have enough time to track someone to their home, before the tag is removed? Will the tag be removed before the purchased product leaves the store?

References

1. *Wikipedia*
Radio Frequency Identification
<http://en.wikipedia.org/wiki/RFID>
2. *Spychips.com*
CONSUMER WATCHDOGS DEMAND RECALL OF SPYCHIPPED CREDIT CARDS
CASPIAN Advises Consumers to Immediately Remove Cards from Wallets
<http://www.spychips.com/press-releases/flawed-credit-card-security.html>
3. *Spychips.com*
TOMMY THOMPSON: THE "CHIPPER" PRESIDENT?
Election Bid Raises Specter of RFID Implant Threat
<http://www.spychips.com/press-releases/tommy-thompson-pres-bid.html>
4. *World Net Daily*
LIFE WITH BIG BROTHER
Employees get microchip implants
Company requires controversial device for certain workers
http://www.wnd.com/news/article.asp?ARTICLE_ID=48760
5. *RFID Journal – The world's RFID Authority*
Marks & Spencer to Tag Items at 120 Stores
By spring 2007, the U.K. retailer says personnel at 78 additional stores will use handheld RFID interrogators to track inventory and make sure certain departments are well stocked.
<http://www.rfidjournal.com/article/articleprint/2829/-1/1/>

Suggested Reading: "Spychips:

How Major Corporations and Government Plan to Track Your Every Purchase and Watch Your Every Move."

By: Dr. Katherine Albrecht, founder and director of CASPIAN and Liz McIntyre