Rural Training Center-Thailand: Technical Paper
ศูนย์ฝึกอบรมชนบท-ประเทศไทย: ทางเทคนิคกระดาษ

RFID Theft Protection

c/o S. Lee, 116 Moo 5 Ban Wangwa, Thawangpha,Thawangpha, Nan Province, Thailand 55140
www.neighborhoodlink.com/org/rtcth E-mail: rtc2k5@gmail.com

Community-based environmental education for the self-sufficiency and sustainability of small rural family farms
ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนชนบทขนาดเล็กครอบครัวฟาร์ม

You may post questions / comments to the Discussion area of our website

We got an e-mail from Jim (KG6TQT) about the vulnerability of RFID cards and documents being remotely scanned without your knowledge. Jim's email contained this link to a news story about this problem: http://www.wreg.com/search/dispatcher.front?Query=electronic+pickpocket&target=article The use of RFID technology is wide spread in the business world. It is touted as being a "convenient" and "safe" technology with credit and debit cards. Recently, governments have mandated its use in security badges and other sensitive documents. Remote scanning of RFID "chipped" materials is easily done with off the shelf technology. Most people are unaware of the vulnerability of their personal and financial data.

Check your wallet for credit / debit cards that have embedded "chips" in them that look something like the photo at the right. US passports issued about or after 2006 have a chip in them if the cover of your passport looks like the photo in the extreme right.

[Note: The news report about RFID theft mentioned that if you have 2 or more cards with RFID chips in your wallet, the signals may cancel out. If this is the case, the most folks may already have built-in protection since many carry more than one RFID chipped card.]

However, those of us with a more conservative approach to life tend to not "put all of our eggs in one basket." Having alternative or back up plans goes hand in hand with the idea of redundancy.

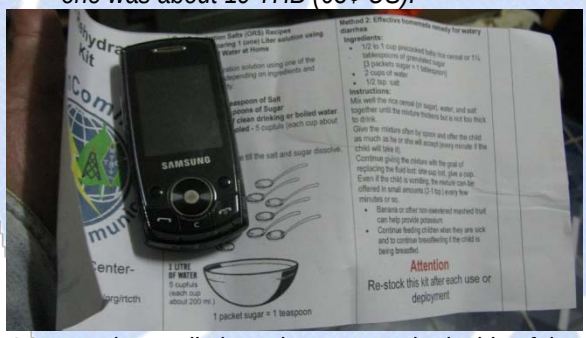
Apparently an "industry" of protective devices has risen to meet the needs of those interested in protecting themselves from this sort of electronic ID theft. However, various geek websites and blogs reveal a wide range of variability as to the effectiveness of these "protective" devices. Some DIY (do-it-yourself) sites have homemade protective devices you can make at lower cost than commercial products. But like many DIY projects, most folks don't have the time to make something.

We are not experts in RFID technology and have neither the lab nor the technical skills to assess the effectiveness of RFID protection devices. But we would like to offer some food for thought about a possible silver bullet for a quick and easy RFID condom.

Our approach involves waste reduction, low cost, and a simple quickie empirical test. You are invited to comment and / or make additional or other suggestions. We have no idea if this RFID condom works on RFID chips / scanners or not. Consider this more of a way to bring the topic of RFID protection to the GERC discussion table.

We start with a common snack food bag. This one was about 19 THB (63¢ US).

Find one that is "foil lined" on the inside. I picked this one out of the trash bin in our kitchen.



I wrapped my cell phone in paper as the inside of the bag was rather oily from the snack food.

I tucked the cell phone into the empty snack food bag…

I folded over the top and held it closed. Then I asked my wife, Saifon, to call my cell phone. She got a message saying my phone was not in service; could not be found.

This simple quickie test suggests that a low cost, simple, effective RFID "condom" (protective barrier) can be fashioned out of a discarded snack food bag. Of course, the disclaimers are:

- Since a cell phone is NOT an RFID chip, I cannot positively prove this simple method will work to protect credit / debit cards and passports.
- I don't know if RFID chips all work on the same radio frequency or not; nor do I know the operating frequencies of the scanners nor the operating distances of any scanners.

For the sake of discussion, just for the moment, let's assume this simple approach does work. I suggest a couple more "refinements."

- Turn the bag inside out: This suggestion is made to avoid the potential problem of some helpful family member seeing the "discarded" snack bag and tossing it out as trash.
- Use a rubber band around the RFIDC (radio frequency ID condom): Once you place your wallet or cards / passport into the RFIDC, fold over the excess and use a rubber band to securely seal the RFIDC. In reading about other "protective" devices, there was mention that protective wallets seemed to work when closed, but when opened, there was no RFID protection. A rubber band helps assure the snack bag silver bullet RFIDC is in fact closed and secure. Also, the rubber band around the smooth bag increases the frictional drag in your clothing pocket making it harder for a pickpocket to lift your RFID condomized wallet.

Turn the empty snack bag inside out so helpful family members won't accidentally toss your new RFIDC out as trash.

Obviously ID theft is not a laughing matter. The increasing use and dependence on materials and documents using RFID technology creates another opportunity for the integrity-challenged folks to steal your identity remotely. Being aware a problem exists in the first important step to solving the problem.