

# Smart Cards for Embedded Healthcare

## How Can You Insure the Integrity and Security of Your Equipment Design?

As designs of new equipment become increasingly complex and regulations become progressively demanding, medical equipment designers must face the challenge of insuring the integrity and security of their designs more than ever before. It is critical to make certain that equipment is operated only in the modes and profiles that they were certified for. Additionally, when something fails or goes out of bounds, a secure record of the event can be the difference between recovery and disaster.

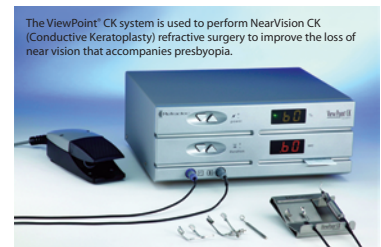
An embedded smart card may be the right solution for you.

### This is not a new idea. It is an evolving solution.



This integrated exercise performance monitor uses a smart card to store workout data and personal preferences.

Secure smart cards have been used to secure medical equipment and the accompanying disposables for many years. One of the first applications was in a leased NearVision CK machine. A preconfigured smart card, included in the one-time use probe kit, allows the matched probe to be used for a maximum number of pulses in a controlled time interval—thus insuring that it can only be used for only one procedure. The card simultaneously records critical machine states during the procedure for irrefutable procedure documentation. Additionally, the card insures that only the procedure that was paid for could be performed—and only after the machine vendor had received the proper payment for it.



The ViewPoint<sup>®</sup> CK system is used to perform NearVision CK (Conductive Keratoplasty) refractive surgery to improve the loss of near vision that accompanies presbyopia.

Smart cards have found use in a myriad of applications such as:

- Hemodialysis machines
- Glaucoma testers
- CPAP (continuous positive airway pressure) devices
- Drug dispensing cabinets
- Laser eye surgery equipment
- Bioassaying devices
- Cholesterol monitoring equipment
- Infusion pumps
- Exercise equipment
- Body mass tracking

### Why use a smart card?

A well designed, embedded smart card application will not only securely store control parameters for the equipment but will enable secure upgrades in the field through an integrated smart card reader or with the use of an internal SIM that is accessible to field technicians. Since a smart card is, in reality, trusted silicon, recent developments have allowed placement of this proven security chip inside larger memory devices such as SD, miniSD and microSD modules as well as in USB flash drives. The smart card can also be used as part of encryption schemes where one piece of equipment must communicate securely with another. This is a very low cost way to keep your equipment proprietary and prevent reverse engineering by competitors or individuals. CardLogix can show you how to achieve this level of security and utility.

### How can you get started?

CardLogix designed the award winning M.O.S.T. Toolz™ kit for just this purpose. Designing systems with secure microprocessor-based smart cards used to be a daunting task. This kit aids designers—many of who are unfamiliar with smart cards—in designing successful and secure implementations. If you do not have the resources to do the design yourself, CardLogix can help speed up your time to market by recommending one of our Smart Partners who are familiar with your industry. For more information, contact your CardLogix Sales Representative.



Smart cards are used with many glaucoma testers, such as the Carl Zeiss GDx, used for RNFL (Retinal Nerve Fiber Layer) analysis, to store calibration and maintenance data.