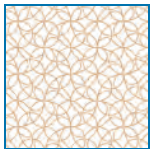
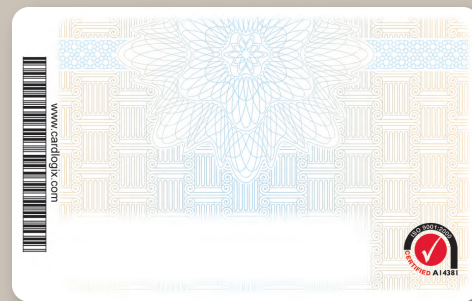
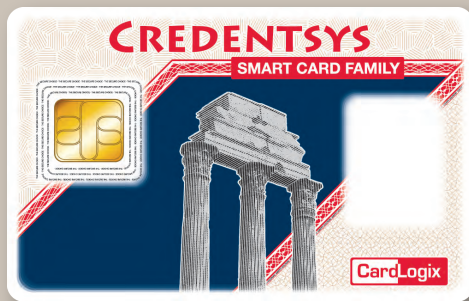


Security Design Options

Physical Features for the First Line of Defense

CardLogix offers a complete array of printing and on-card security features to round out any ID card program. Secure printing is the final, important step in producing a card that discourages and prevents unauthorized physical replication for fraudulent behavior. Smart cards can be authenticated through a card reader, using sophisticated encryption techniques. But all too often, an issuer fails to see that card graphics must be equally sophisticated to make card issuance totally secure.



Guilloche are complex geometric patterns that consist of numerous interwoven fine lines. Because each pattern is uniquely generated, exact reproduction is nearly impossible.



Microprinting (nanometer imaging) is a printing technique that creates a faint line, composed of very fine text. This text is only clearly legible through a magnifying glass or microscope. It is impossible to reproduce using conventional scanners and desktop card printers.



Ultraviolet (UV) Inks are available in an array of colors. UV ink is invisible in normal light, but glows brightly when exposed to black light. UV ink can be used for any printed security feature on a card (graphics, text, etc.). (Viewable on CardLogix's sample Credsentsys™ card).



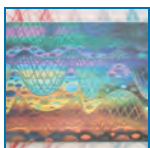
Hidden Images are mathematically buried in the printed card and can be viewed with CardLogix's *Card Validator™ Lens*. Because of the fine detail used to generate the hidden images, they cannot be scanned, copied, or reproduced.



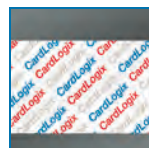
Laser Engraving is the burning or removing of material (known as ablation) from plastic in order to create images, text, or machine-readable barcodes. These techniques produce a physical characteristic that cannot be recreated or removed.



Optically Variable Devices (OVDs) consist of a holographic film or layers applied to a card's construction. Holograms may have 3-dimensional effects, color changing properties, etc.



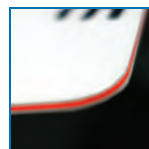
Holograms and Holomags display images that shift when the viewing angle is changed. They can be embedded or laminated onto the card after printing. CardLogix works with a variety of suppliers to offer numerous designs and options.



Tamper-Evident Signature Panels are writable labels for a user's signature or other written data using non-eraseable, custom-printed materials. (Not shown on card.)



Color Shifting Ink, commonly seen on currency, gleams different colors as the viewing angle changes. The effect is impossible to reproduce with scanners and copiers. (Not shown on card.)



Colored Interlayers are layers of colored material sandwiched between two or more translucent layers of laminate that, when viewed on the proper plane, change the most prevalent color of the card to the color of the interlayer material. (Not shown on card.)