



MULTI-APPLICATION SEAMLESS



SECURITY & ACCESS CONTROL



GLOBAL PAYMENT SOLUTION



CONTACT & CONTACTLESS

*Trusted partner for
Advanced High Security Anti-forgery Card Solutions*

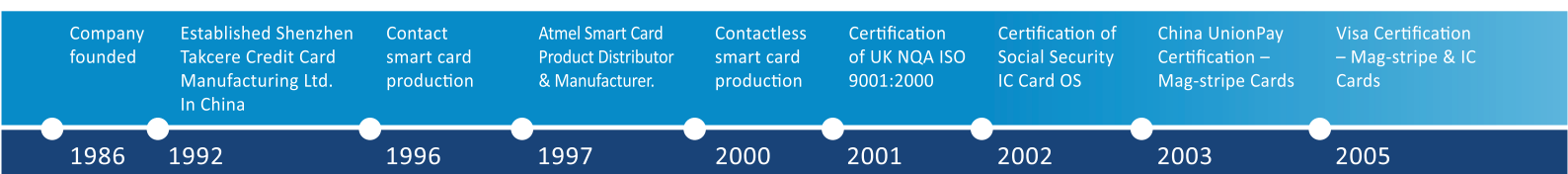
SmartTech Production

Partner you can trust with complete confidence

www.smarttech.com.hk

Discover the **LEADING MANUFACTURER** as trusted partner

*Equipped with one of the largest workforce
for smart card solution in Southern China*



A solid foundation

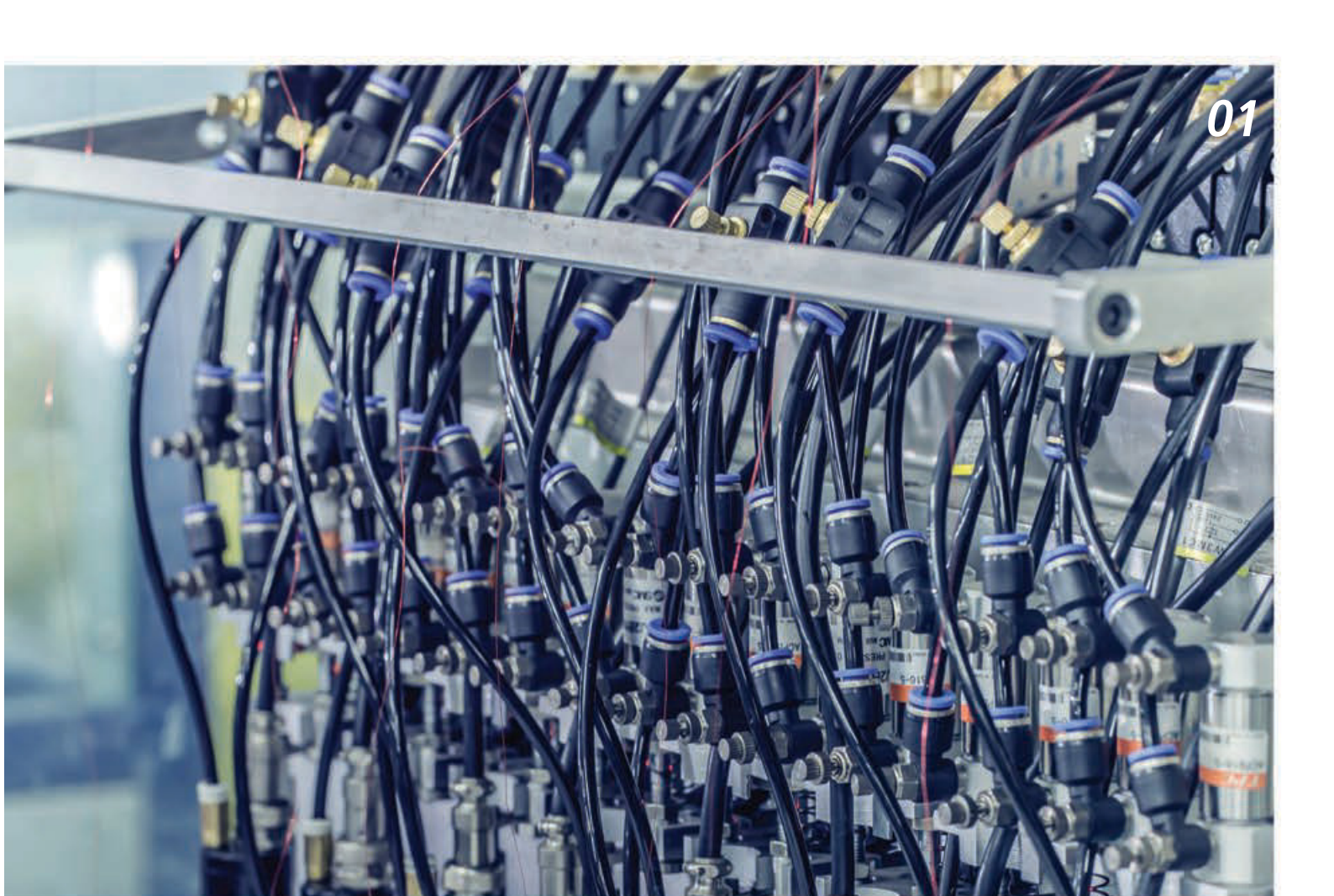
Founded in the Hong Kong in 1986, SmartTech Production, a pioneer in plastic card industry and identification solution provider in the region, has growth from strength to strength in the past 28 years. With a view to better serving our global customers with quality products, we set up a production plant and an office in the Chinese mainland in 1992, Shenzhen Takcere Credit card manufacturing Ltd. Currently a company with over 400 staff members, we have successfully leveraged the complementary advantages on both sides of the boundary, enjoying an abundant supply of land and labour resources in the Chinese mainland while benefiting from the efficient and rule-based infrastructure and operation in Hong Kong.

A comprehensive range of product and services

In terms of product, our manufacturing facility can provide the broadest range of cards to cater for the different needs of our customers from every corner of the world, ranging from banking card, contact/contactless/dual-interface/NFC smart card, to ID card, plastic cards and tags. Capacity wise, our production plant can deliver 250 million cards per year.

In terms of service, we can be justly proud of our One-Stop Card Solution. We have a full team of professionals who could serve as consultants, offering cost-effective options according to clients' requirements, providing design services as well as overseeing product development and manufacturing process.

Over the years, we have served over hundred thousands clients from different sectors, including the government, banking, insurance, security, transportation, education, retail, hospitality, telecommunication, healthcare and many others. Among them, there are multinational companies as well as small and medium enterprises.



Visa & MasterCard
Certification –
Personalization of Mag-
stripe & IC cards

2006

Dual-interface
smart card
production

2007

High speed
production
for special
diecut cards.

2008

China UnionPay
Card Certification
- IC card products.

2010

High speed
personalization of
DOD Printing

2011

DataCard
Distributor for
Desktop Card
Systems

2012

Certification
of OHSAS
18001:2007

2013

High speed
personalization for
EMV cards

2014



Certification of
PBOC OS by BCTC.

High speed
personalization
for contact and
contactless smart
cards

GLOBAL EXPERTISE

We aim to bring you the most reliable, efficient and comprehensive smart card products & services

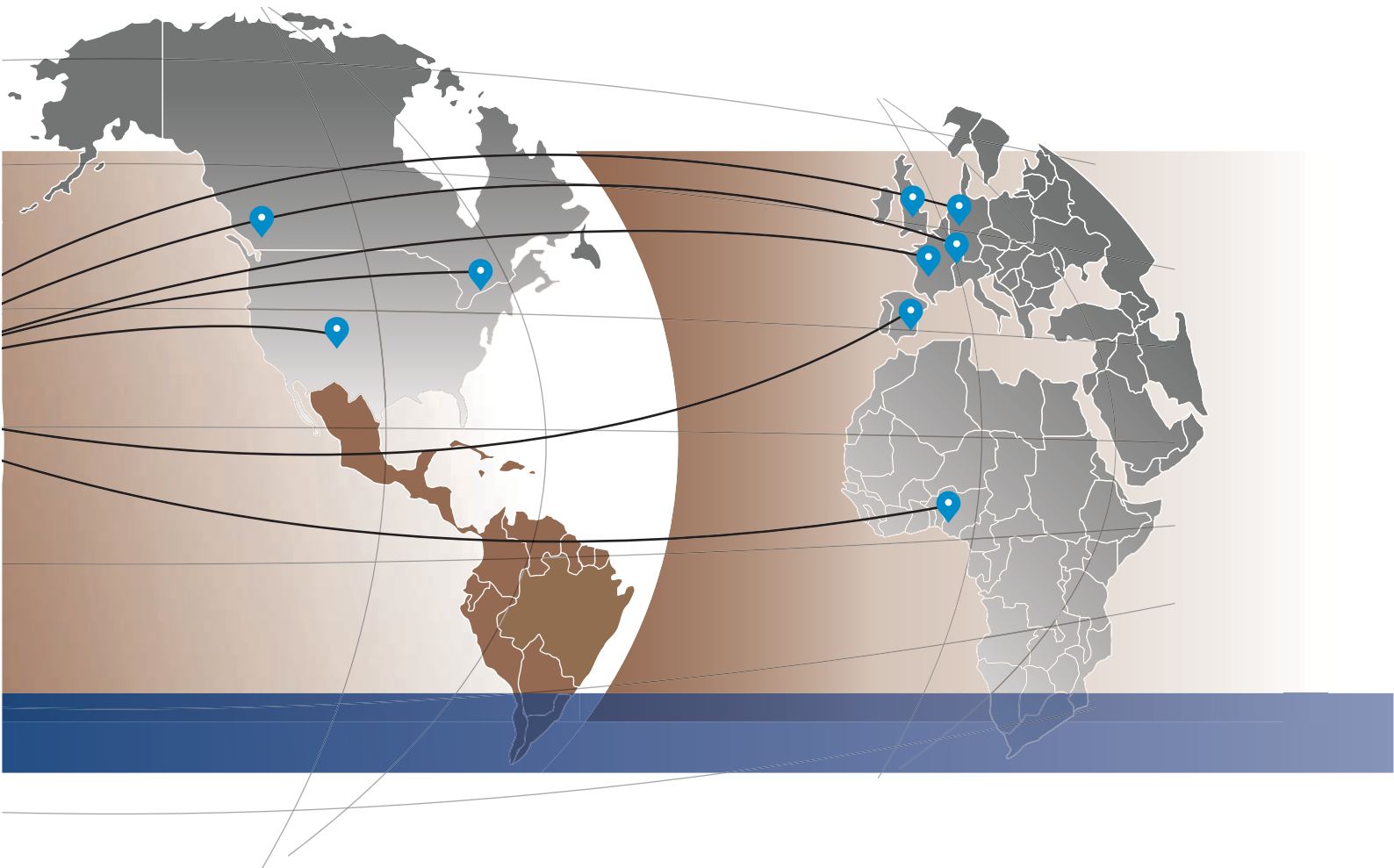
An assurance of quality, environment, health & safety

A commitment to excellence

Innovation and technology is the key to success nowadays, especially with the smart card products. We are among the first card manufacturers in the region which set up its own Research and Development Centre to develop new and improved product and to identify add-value services to meet the rising expectations of our customers. Well supported by the System Engineering Department and Special Project Department, our innovations and advanced technologies can always be fully utilized for the benefits of the customers.

We share the world's concern on sustainable development and are very proactive in ensuring that sustainability remains our core value. Our security card production plant has been certified by Visa Card International, MasterCard International, China UnionPay, ISO9001:2008 Quality Management, ISO14001:2004 certificate of International Environmental Protection as well as OHSAS 18001:2007 certificate of Occupational Health and Safety Management System. We follow closely the international quality control standards and practice guidelines and make sure that our product quality would showcase the highest industry standards.







Approved vendor by:



STATE-OF-THE-ART

microprocessor that stores & transacts data



A smart card, chip card or IC card is any pocket-sized card with embedded integrated circuits (IC). Smart cards are made of plastic, generally in PVC.

*tamper-proof high security
smart card solution*

is dedicated to satisfy all needs of different applications



A smart card may have the following generic characteristics:

- Dimensions similar to those of a credit card ID-1 of the ISO 7816 standard defines cards as nominally 85.60 by 53.98 mm. They are 0.82 mm thick.
- Contains a tamper-resistant security IC and provides protection for in-memory information.
- Communicates with external services via card-reading devices, such as smart card readers, ATMs, etc.

In 1993, several international payment companies agreed to develop smart-card specifications for debit and credit cards. The original brands were Europay, MasterCard and Visa (EMV). Now EMV is an international standard for payment smart cards.

We, Shenzhen Takcere & SmartTech Production offer a broad range of smart card products, including contact & contactless IC cards to meet with customer requirements.

Contact IC Card Standard: ISO 7816
Contactless IC Card Standard: ISO 14443

EMV is a trademark dating back to 1999, after Europay, MasterCard, and Visa founded EMVCo with the purpose of developing specifications for secure payment transactions.

EMV

Europay, MasterCard & Visa EMV payment solutions

EMV is an open-standard set of specifications for smart card payments and acceptance devices. The EMV specifications were developed to define a set of requirements to ensure interoperability between chip-based payment cards and terminals. EMV chip cards contain embedded microprocessors that provide strong transaction security features and other application capabilities not possible with traditional magnetic stripe cards. Today, EMVCo manages, maintains and enhances the specifications. EMVCo is owned by American Express, Discover, JCB, MasterCard, UnionPay, and Visa, and includes other organizations from the payments industry participating as technical and business associates.

Issuers are now issuing EMV cards that support contact and/or contactless EMV transactions. Contactless EMV transactions use the ISO/IEC 14443 protocol for communication, with EMVCo defined specifications. The EMV specifications provide a basis for contactless EMV payments so payment brands can implement contactless payment for EMV transactions to function in both offline and online transaction environments and to leverage the EMV cryptogram security function to validate the authenticity of the card and the transaction.

Why choosing EMV solutions:

- Issuers around the world are including chips in bank cards and merchants are moving to EMV-compliant terminals to increase security and reduce fraud resulting from counterfeit, lost and stolen cards.
- EMV secures the payment transaction with enhanced functionality in three areas: Card authentication, Cardholder verification & Transaction authorization.
- EMV can also address card-not-present (CNP) fraud, with cardholders using their EMV cards and individual readers to authenticate Internet transactions.

EMV Solutions:

As one of the market leaders for smart card products in banking sector, we offer a comprehensive range of EMV card products. These products have been specifically tailored to address the need with two things in mind: security plus reasonable cost.

Our professional consulting team can assist you select the right technology of EMV cards. Working with various chip vendors, we work towards your requirements for different card types like contact, contactless & dual-interface cards, offering the best solutions in the industry!

A dual-interface card has a single chip with both contact and contactless interfaces. Dual-interface cards implement contactless and contact interfaces on a single card with some shared storage and processing so it is possible to access the same chip using either a contact or contactless interface with a very high level of security.

On a dual-interface card which is usually microcontroller based, the chip hardware resources, e.g. memory and crypto co-processors, can be accessed via both interfaces. Generally speaking, this term refers to the smart card standards ISO7816 (contact) and ISO14443 (contactless). This depends though only on the operating system and how the application is written.

Dual-interface chip card can be applied for high security applications with a variety of operating systems (Native, Java & MultOS). It also enables card holders perform contact and contactless transactions under a highly secure platform. Through this dual-interface technology, multi-applications are possible such as electronic money, banking, transportation & access management.

Why choosing Dual-Interface solution

- Dual-interface payments are safe, secure, and convenient. Contactless interface of dual-interface technology is built from the ground up on requirements for high security. Contactless payment devices use sophisticated smart chip technology with built-in intelligence and multiple safeguards specifically designed to protect against fraud. Consumers enjoy the convenience, merchants realize faster checkout times and increased throughput, and issuers achieve increased activation rates and usage.
- One advantage of dual interface smart cards is that they may retain (limited) functionality even when one of their interfaces fails.

Dual-Interface Chip high security contact & contactless solution

Contact IC Card Standard: ISO 7816
Contactless IC Card Standard: ISO 14443



contactless multi-application seamless solution



MIFARE

MIFARE is the NXP owned trademark of a series of chips widely used in contactless smart cards. Mifare is a 13.56 MHz contactless technology and complies with ISO14443A - the industry standard for contactless smart cards. Mifare cards are powered by an internal antenna as the card moves into a magnetic field. Mifare has proven popular as the card to use in ticketing and low value transactions.

Mifare covers four main kinds of contactless cards:

- Mifare Classic - employ a proprietary protocol compliant to parts (but not all) of ISO/IEC 14443-3 Type A, with an NXP proprietary security protocol for authentication and ciphering. There are Mifare Classic 1K and 4K versions.
- Mifare UltraLight - low-cost ICs that employ a proprietary protocol compliant to ISO/IEC 14443-3 Type A. But MIFARE Ultralight C is the first low-cost ICs for limited-use applications that offer the benefits of an open Triple DES cryptography.
- Mifare DESFire EV1 - smart cards that comply to ISO/IEC 14443-4 Type A with a mask-ROM DESFire operating system from NXP, including Triple-DES/AES encryption.
- Mifare Plus - a replacement card for the MIFARE Classic. It provides an easy upgrade of existing infrastructures toward high security (Support for 128-bit AES).

Why choosing Mifare contactless cards:

- Faster process – the convenience of touch-and-go experience for passengers;
- Higher efficiency and less costs – increasing efficiency by shortening check-out times, reducing costs of less cash handling;
- Better security – offering a payment device with higher security features and decreasing fraud.

Mifare Card Solutions:

Our Mifare card product family brings many benefits to end users. Card holders can experience fast & convenient contactless process in ticketing, vending machine, access management, loyalty and social services. The solution offers enhanced, user-friendly system design, in combination with security and reliability.

Our contactless cards are available in different forms, including standard ISO cards, key fobs, mini cards, customized special shape and more. To be creative you see today, we can help you implement a customized product that meets your marketing needs.

RFID

security and access control

Contactless IC Card Standard: ISO 14443

A proximity card is a type of credential that is typically used for access control. A proximity card is a contactless integrated circuit device with an antenna and a chip that operates on a 125 kHz frequency. A proximity card becomes energized when it enters the RF field of the reader and transmits its static card data.

RFID products fulfill the market requirements that call for fast, secure and reliable identification systems. Most applications use passive RFID technology.

We understands how to produce RFID access cards providing reliability and security. RFID card provides corporate security and identity application on each user. It is fitted with an RFID proximity chip for physical access and a mini-driver-enabled contact chip that works for logical access.



Why choosing RFID Access cards:

- Enhanced access security – RFID technology is used as access control embedded in ID cards which not only prevent unauthorized access to buildings or hotel rooms or other objects but also applied for time attendance monitoring;
- Convenience with security – an RFID card is capable of stored value which acts as transportation pass or loyalty/prepaid utility card; Prevent unauthorized access – the unique ID number of RFID-based security key to ensure anti-theft.

All-in-one multi-features

ADVANCED SECURITY ANTI-FORGED SOLUTION



All-in-one Security Features

As technology becomes more readily available to the average user, it has become easier to duplicate and create forged cards. That's why it is important that your personal cards include at least one security feature that protects them from fraudulent use and duplication.

We offer a superior selection of different card security features to protect your cards, and your facility. Use multiple security features in any combination to provide exceptional protection for your security card program.

For secure environments, multiple technologies can be incorporated into the plastic card to strengthen its security, make it difficult to counterfeit, and show evidence of tampering. Such card technologies include:

Smart Chip, Hologram, Micro Lettering, Guilloche Pattern, Optical Variable Ink (OVI), Multilayered Effect & Pearlescent Effect, etc.

SECURITY HOLOGRAM

Security holograms are very difficult to forge because they are replicated from a master hologram which requires expensive, specialized and technologically advanced equipment. They are used widely in several banknotes around the world, in particular those that are of high denominations.

Holograms are classified into different types with reference to the degree of level of optical security incorporated in them during the process of master origination.

MICRO LETTERING

This involves the use of extremely small text, and is most often used on currency and bank checks. The text is generally small enough to be indiscernible to the naked eye. For example, use microprint as the fine line.

MULTILAYERED

Elements or images are printed in different layers. The benefits are that a distant effect is created by this special printing technique.

Various Security Features

GUILLOCHE PATTERN

A guilloche is a repetitive architectural pattern used in classical Greece and Rome, and neo-classical architecture as well as medieval Cosmatesque stone inlay work, of two ribbons winding around a series of regular central points. These central points are often blank, but may contain a figure, such as a rose.

Guilloche is a back-formation from guiloché, so called because the architectural motif resembles the designs produced by Guilloche techniques.

SMART CHIP

Smart chip can provide identification, authentication, data storage and application processing. Smart cards may provide strong security authentication for single sign-on (SSO) within large organizations.

PEARLESCENT POWDER

Pearlescent inks possess optical effects that not only serve decorative purposes but also provide important functional role such as security printing.

OPTICAL VARIABLE INK

Optical Variable Inks are inks containing pearlescent pigments that change color when viewed at a different angle. The color of the ink does not actually change, but the angle of the light to the viewer's eye changes and thus creates the change in color. A number of types are available, including gold to red.

CARD PRINTING

Technologies

Mastering the technologies and art of printing industry, we strive to deliver the highest quality of custom design card products to all customers.



Brilliant Graphics
Offset Printing

Shiny Metallic Colour
Silk-screen Printing in Gold



Colourful
Pantone Spot Colour

Superb Twinkling
Pearlescent Colour



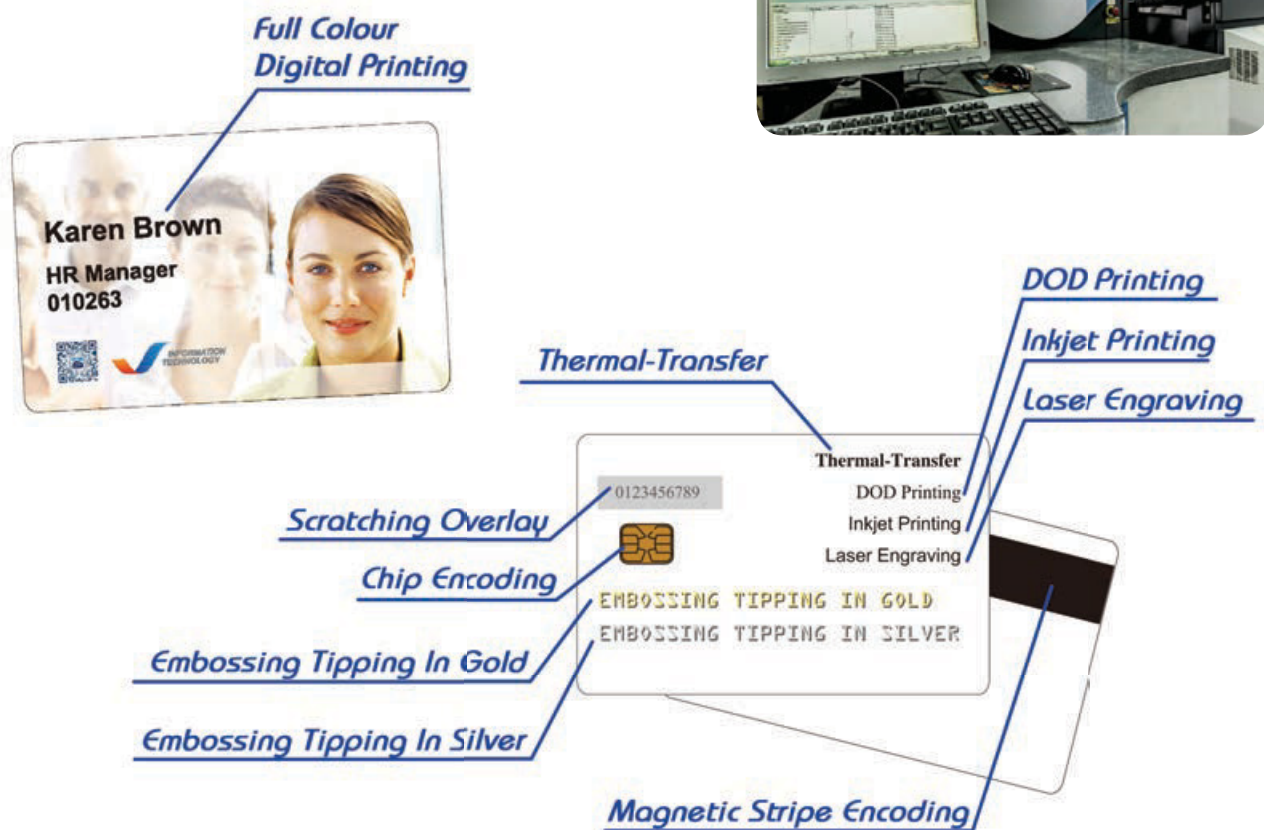
Sparkling Clear
Spot UV

Translucent Fresh
Transparent Card



CARD PERSONALIZATION SOLUTIONS

one of the most critical components of secure cards



Physical card personalization meets ISO specifications with encoding, thermal imaging of barcode, DOD printing, embossing, laser numbering, chip initialization and personalization, etc.

Personalization is one of the most critical components of secure cards, and we provide an industry leading level of expertise. Our personalization technology ranges from a wide range of options for loyalty cards, prepaid gift cards and smart cards. China UnionPay, MasterCard and Visa have certified the personalization bureau in our high security card plant.

Smart card personalization is a refined process that involves precise handling of sensitive data. A dedicated process with complete organized equipment and well-trained staff, is mandatory to ensure success.

We have thorough experience in personalization services for our customers in different sectors. With a range of added-value services and the capacity to personalize up to million cards, we provides quick and secure personalization of cards.

ECO FRIENDLY

our environmentally friendly card option

Eco-friendly Cards

"Going Green" has been around for a period of time in the card industry. As society continues to raise the importance on the efforts to protect the earth and as vendors respond to the new requirement, the path to a greener life is certainly on the cards. Our Eco-friendly PETG card reflects our commitment to supporting environmental protection. We began to move to PETG material, which is a chlorine-free alternative to PVC. PETG material can be incinerated without creating harmful gases.

Widely used for gift cards and credit cards, PETG performs the same characteristics as PVC and is the perfect material for the recycled business cards or other applications.



PETG

PETG (Polyethylene Terephthalate Glycol) is one of the most environmentally friendly materials for making plastic cards. It is a perfect material for leading plastic card retailers and credit card issuers. PETG is a clear, strong, and durable material that is free of any harmful chemicals.

Special DIE-CUT CARDS & TAGS

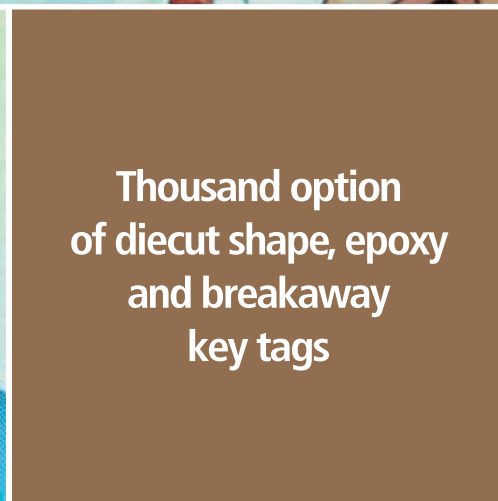
Special die-cut card is one kind of effective marketing tool. Die-cutting can be easily adopted with nearly all of our specialty card technologies. These diecut options are ideal for variety of applications such as ID badges, loyalty cards, gift cards, key tags & smart tokens, etc.



**DIECUT -
GENERAL RECTANGLE /
OVAL SHAPE**



Standard card with Slot Punch
The slot punch allows the optional
use as a baggage tag.



**Thousand option
of diecut shape, epoxy
and breakaway
key tags**



**SPECIAL EFFECT -
EPOXY**



**Standard card with one breakaway
key tag, two breakaway key tags
& three breakaway key tags**

Used in a variety of loyalty, frequent
shopper, supermarket, clubs, membership,
rental car or hotel loyalty programs, etc.

**BREAKAWAY -
1 KEY TAG**



**BREAKAWAY -
2 KEY TAGS**



**BREAKAWAY -
3 KEY TAGS**

SECURE IDENTITY

Datacard desktop systems

Datacard Group offers technologies for securing identities and safeguarding transactions in physical and digital environments.

Datacard Group brings trust and security to each of those interactions for millions of people every day – across both physical and digital domains. Security-minded enterprises rely on Datacard Group and use our solutions as a foundation for their identity and transaction infrastructures. Our instant issuance solutions and mobile payment solutions are creating new opportunities for banks, retailers and other consumer marketers. We're engaged in high-profile government identity programs around the world.

We also serve customers in telecommunications, aerospace, pharmaceutical, education, healthcare and petroleum markets.

Datacard Group offers end-to-end card production solutions from initial design to finished, printed cards. Start by identifying your secure identification requirements, then work with your authorized datacard® provider to choose an ID solution that can help your organization become more efficient and protected against daily threats.



DATACARD® CD800 CARD PRINTER

- Print higher volumes, longer runs, and more complex cards with a higher level of efficiency all from the convenience of your desk.
- The card printer revolutionizes high-quality printing with the industry's first print resolution of 300 x 1200 dpi.
- The card printer outperforms the fastest card printers in its class so you can issue ID cards more efficiently and without hassle.
- With printer controls and card hoppers up front, you can conveniently access all user functions from one location on the CD800 printer.



DATACARD® SP75 PLUS PRINTER

- The SP75 Plus printer can be configured with one standard laminator and a second optional laminator. With both laminators, you can apply any combination of security laminates or protective topcoats in a single pass, or apply different laminates to each side to improve cost-efficiency.
- This printer delivers superior dye sublimation quality and true edge-to-edge coverage.
- Strengthen card security with variable text ultraviolet (UV) fluorescent printing. USB and Ethernet connectivity



DATACARD® SR300

- Retransfer printing technology delivers vivid results with over-the-edge coverage for a wide range of applications.
- Print dual-sided on a variety of blank or preprinted card stocks (PVC, PET, PET-G, and polycarbonate).
- Integrate the SR300 card printer with the optional Datacard® LM300 duplex laminator to apply patches, topcoats, overlays, laminates or two layers of InTM film for outstanding durability and long card life that strengthen ID cards and provide greater protection against card fraud.

SECURED CUSTOMIZATION

Zebra desktop systems

Zebra card printer solutions offer improved personnel tracking, access control and secure ID badges. Choose from a broad range of single or dual sided color card printers. Options range from wired and wireless network connectivity, smart card and magnetic stripe encoding, to lamination for higher security and card durability. There is a Zebra card printer to meet all your business needs: from payment cards to driver's licenses, membership cards to employee identification badges, gift cards to ski pass IDs, and much more.

Card printers let you print customized, secure, and cost-effective cards on demand, right from your desktop and are a great alternative to card printing houses. From ID card printing and membership card printing, to credit card printing, gift card printing, and loyalty card printing, Zebra helps companies print cards for any number of applications. Cards can be printed or encoded with multiple features like barcodes, magnetic stripes, or radio frequency identification (RFID) to increase their capabilities. For added security, print with anti-counterfeiting features such as tamper-proof lamination with holograms



ZEBRA® ZXP SERIES 3™ CARD PRINTER

- Security: employee ID cards, student ID cards, access control cards
- Retail/Hospitality: loyalty cards, gift cards, membership cards
- Financial Services: instant issuance financial cards



ZEBRA® ZXP SERIES 7™ CARD PRINTER

- High-volume Environments: service bureaus, identification cards, loyalty/membership cards, access control
- High-security Industries: government credentials, secure access control, financial services
- Other Industries: education, gaming, healthcare, hospitality, retail, sports & entertainment



ZXP SERIES 8™ RETRANSFER CARD PRINTER

- ID and access control cards
- Government-issued driver's licenses
- National ID and voter registration cards
- Instant issuance of financial cards
- Personalized gift, membership and loyalty cards
- Smart cards in travel, gaming and entertainment



Hong Kong Head Office
Unit 908-911, 9/F., Yale Industrial Centre,
61-63 Au Pui Wan Street, Fotan, N.T., Hong Kong.

Tel : +852 26739918
Fax: +852 26739908
E-mail: sales@smarttech.com.hk
www.smarttech.com.hk

SmartTech Production

Partner you can trust with complete confidence

www.smarttech.com.hk