Thales Gemalto
Biometric Sensor
Payment Card

Improving user convenience while ensuring greater trust and security
The Thales Gemalto Biometric Sensor Payment card (BSPC) provides banks with a highly secure and intuitive solution to perform contactless payments in stores with no payment limit. The BSPC is the first biometric payment card certified by Mastercard and VISA and is a real game changer for payments. With its embedded fingerprint sensor, it greatly reduces fraud using strong authentication. It’s also quick and easy for issuers to deploy as it does not require any POS terminal upgrades. This new card removes the threshold for contactless payments and delivers the full promise of this technology when was first launched.

What is the Thales Gemalto biometric sensor payment card?

The Thales Gemalto BSPC is an innovative, simple-to-use and convenient payment method that uses biometric information to verify a cardholder’s identity. Customers verify their fingerprint by placing their thumb on a sensor on the card. A comparison is then performed between the scanned fingerprint and the reference biometric data securely stored in the card.

Users can use it for everyday contactless transactions in stores with no payment limit.

What makes it different from existing EMV payment cards?

The Thales Gemalto BSPC includes all the benefits of an EMV payment card: same size, accepted at any EMV point-of-sale, ubiquitous, no on-card battery in the card, so it’s always operational.

In addition it has:

- **On-card fingerprint-based authentication**: fingerprint-based authentication is enabled by a biometric sensor located on the card.
- **No PIN or signature necessary**: Cardholders can now perform a contactless transaction below or above the traditional threshold simply by authenticating their finger on the card itself.
- **Increased security**: with its embedded fingerprint sensor, the BSPC greatly reduces fraud attempts using strong authentication. It complies with the highest-level security and privacy policies: no biometric data leaves the card at any time and it is never used during the transaction. Only the result of the verification is communicated inside the card to the EMV application in the Secure Element (an EMVCo security-approved chip).

The probability of another user being recognized as the genuine user by the Thales Gemalto BSPC is less than the chance of another user guessing the card’s PIN code (10,000 combinations). Fingerprint verification on the card has a False Acceptance Rate (FAR) of < 1 / 10,000.

The probability of the genuine user’s finger not being recognized is highly unlikely with a False Rejection Rate (FRR) of < 3%. Additionally, the Thales Gemalto solution implements a unique Dynamic update feature in the biometric algorithm: thanks to continuous learning, the more a cardholder uses the card, the less likely they are to have their finger rejected.
Why deploy it now?

- **A solution with a high consumer demand**
  Consumer appetite for this card is strong with several thousand users in more than 10 countries having already tested the Thales Gemalto solution and expressed a very high average satisfaction rate of between 80% and 95% in each trial. People enjoy the convenience of the solution as it allows easy and safe contactless payments whatever the amount.

  International banks are now working with Thales Gemalto and the major EMV schemes on the world’s first commercial deployments in France, Switzerland and the UK for example.

- **Limited investment and fast deployment**
  The BSPC does not require any upgrade of POS terminals that already support mobile payment. There is no need for any firmware or hardware updates.
  And it can still be used with traditional CVMs (PIN, signature) with legacy terminals or at ATMs.

- **A solution already certified by two major payment schemes**
  The Thales Gemalto BPSC is the first biometric payment card certified by international payment schemes Mastercard and VISA for commercial deployments.
  Both VISA and Mastercard have upgraded their standard payment applications specifications to handle biometric verification with very high security and performances requirements.

How does enrollment work?

**Enrollment is easy and convenient and** can be performed at a bank branch or at home.

- If the enrollment is carried out **at home**, the card simply has to be inserted in a **sleeve device** (made from recycled plastic) delivered together with the card. The cardholder places their thumb on the card’s sensor in different positions until the green light on the card flashes, meaning that the process is completed. The reference template of the fingerprint is built and securely stored in the card, allowing it to verify the cardholder’s fingerprint for each future payment.

- If it is carried out at the **bank branch**, the card can be inserted in a **card reader** (Thales Gemalto provides PINpad readers or a generic SDK to launch and follow the enrollment from a tablet or a PC to a connected card reader). The process is similar to the home one, with the extra indications shown on the device’s display.

The device (sleeve or reader) is only used to power up the card to start the enrollment sequence. Thanks to two LEDs on the card indicating the progress of the fingerprint(s) recording, the enrollment is intuitive and easy to do.

During enrollment, no biometric data go through the enrollment devices or are sent outside of the card.

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**Compliance and platforms**

The Thales Gemalto BSPC complies with the latest industry standards:

- EMV ICC Payment Specification for Payment Systems (V4.3 – Book A to Book D)
- EMV Contactless Specifications for Payment Systems (V2.6 - Book A to Book D).
- ISO 7816 (1 to 4 / contact part)
- ISO 14443 (1 to 4 / contactless part)

**Platform options**

- JavaCard : 3.0.4
- Multos : ML5
- Global Platform : 2.3
- MChipAdvance : 6.1 BPSC
- VISA : DualVSDC6.4 (VCPS2.2.3/VIS1.6.2/VBSS0.9 compliant)

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**Securely enrol**

your fingerprint on the card, either in branch or at home

**Tap your card**

or insert it into any standard payment terminal in a shop, gas pump etc.

**Hold your finger**

on the card’s fingerprint sensor to be securely and quickly authenticated by the card

**That’s it!**

No PIN required. You can also make contactless payments of higher amounts!
Thales Gemalto is the ideal partner to support banks during the implementation phase.

Thales Gemalto has put the BSPC through 18 months of live trials with major banks in six countries involving more than 1,300 users. Over 80% of users confirmed they love it and are ready to use it to enjoy more convenience and greater security.

Thales Gemalto has already implemented this solution with banks worldwide, including Cyprus, the Middle East, France, Italy and the UK.

With its proven experience in delivering banking and payment projects to 3,000 financial institutions, Thales Gemalto offers the expertise that banks need to ensure a successful deployment of the Biometric Sensor Payment Card.

Why choose Thales Gemalto Biometric Sensor Payment Card?

- **Superior performance:** Proven by the highest number of bank biometric card projects with Thales and certified by VISA and Mastercard
- **Enhanced user convenience:** User-friendly contactless payments with no upper or lower limit and no PIN
- **Safe and touchfree:** verification is carried out on the card with no need to touch a POS terminal
- **Higher contactless payment security:** fingerprint authentication for any amount, protecting loss and stolen cards
- **Payment innovation:** boost your bank brand image by offering an innovative, hi-tech yet easy-to-use service
- **Customizable and intuitive:** configurable by the bank, designed to be easy to enroll and use by the cardholder