FurlPay
Tap. Pay. Go.

PRODUCT BROCHURE · 2026 EDITION




THE FURLPAY SMART PAYMENT RING

# One ring. Every tap.

**Tap. Pay. Go.**

Your Wallet. Your Identity. On Your Finger.

ELEGANT · SECURE · EFFORTLESS




01 — INTRODUCING

# Your wallet. Your identity. On your finger.

The FurlPay Smart Payment Ring is a contactless wearable that places payments, access and identity credentials inside a single piece of jewelry. It carries no battery and no screen: it is powered by the NFC reader it is tapped against, and secured by a dedicated secure element.

### THE PROBLEM IT SOLVES

Wallets, cards, key fobs, badges and phones each carry a separate credential. Every one can be lost, forgotten, cloned or left uncharged.

### WHY WEARABLE CONTACTLESS

A ring is always on the hand that reaches for the reader. A tap takes a fraction of a second and needs no unlocking, no app launch and no charging.

### PHYSICAL MEETS DIGITAL

The FurlPay app provisions and manages credentials; the ring presents them to payment terminals, transit gates, locks and phones over standard NFC.

## DESIGNED FOR FIVE CREDENTIAL RAILS

**Pay**
Contactless payments

**Transit**
Open-loop gates

**Drive**
Vehicle keycard

**Access**
Offices · hotels · homes

**Identify**
Passkeys · vCard

## HOW TO READ THIS BROCHURE

SPECIFIED

Described in the engineering specification v3.4.0. Production test reports and certificates are attached separately.

PLANNED

Intended capability. Not yet described as released.

PARTNER-DEPENDENT

Requires agreements, certification or enrolment with third parties — card networks, issuers, transit operators, vehicle makers, lock vendors.

TO BE CONFIRMED

Information not available in current documentation. No claim is made.

02 — PRODUCT DESIGN

# Black metal presence. Silver precision.






**Raised FurlPay mark**
Silver-white logo on a matte face panel



**NFC contactless symbol**
Recessed into the side flank




**Interior engraving**
“FurlPay” engraved inside the band

### SHAPE & FINISH

TO BE CONFIRMED

The reference renders show a flat-fronted band with a raised, rounded face panel. The face is matte black; the edges and rim are polished to catch light. The logo is raised silver-white. Specification text mentions a high-gloss mirror finish — to be reconciled with the rendered matte face before production.

### MATERIAL

SPECIFIED

Specified as yttria-stabilised zirconia ceramic (Y-TZP), vacuum-sintered, diamond-ground and polished. Ceramic is RF-transparent, so the antenna can sit inside the band — unlike a metal shell, which shields 13.56 MHz fields.

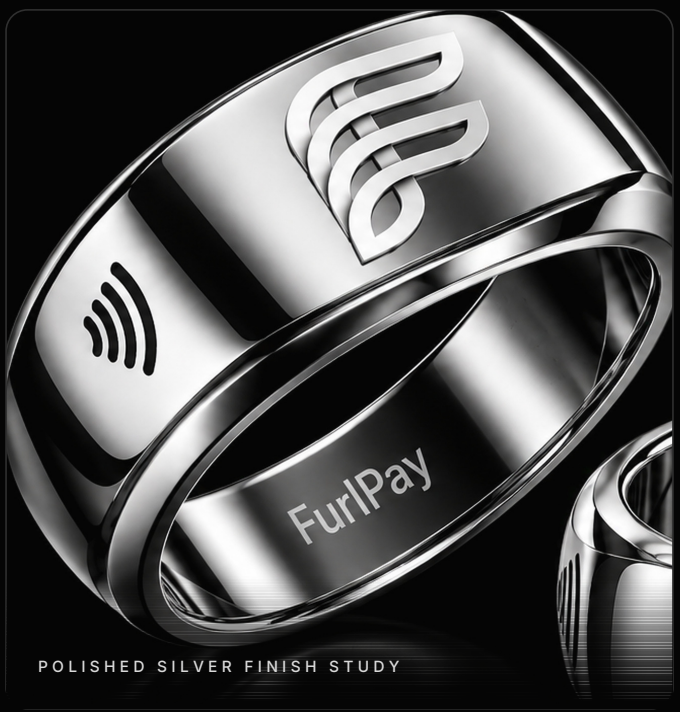
### DURABILITY & WATER

TO BE CONFIRMED

Engineering targets: 8.5–9.0 Mohs surface hardness, 10ATM water pressure, −20 °C to +70 °C operation, ISO 10993 skin-contact testing. Test reports and certificates are not yet attached.

02 — SIZING & FINISH

# Engineered to be worn every day.




POLISHED SILVER FINISH STUDY

A polished-silver concept render of the same design. Availability of a silver finish has not been confirmed.

TO BE CONFIRMED

SIZE RANGE — US SIZES 6 TO 13

| US SIZE | INNER Ø | WIDTH | THICK. | MASS |
|---|---|---|---|---|
| 6 | 16.5 mm | 8.0 mm | 2.5 mm | 4.6 g |
| 7 | 17.3 mm | 8.0 mm | 2.5 mm | 4.7 g |
| 8 | 18.1 mm | 8.0 mm | 2.5 mm | 4.9 g |
| 9 | 18.9 mm | 8.0 mm | 2.6 mm | 5.0 g |
| 10 | 19.8 mm | 8.0 mm | 2.6 mm | 5.1 g |
| 11 | 20.6 mm | 8.2 mm | 2.7 mm | 5.3 g |
| 12 | 21.4 mm | 8.2 mm | 2.7 mm | 5.4 g |
| 13 | 22.2 mm | 8.2 mm | 2.8 mm | 5.4 g |

Design values from the engineering specification. To be re-measured on production samples.

TO BE CONFIRMED

## COMFORT, CUSTOMISATION & MANUFACTURING

### Comfort & ergonomics

TO BE CONFIRMED

A thin profile (2.5–2.8 mm) and a hypoallergenic ceramic lining are specified. The curved inner band is designed to sit flush on the finger. Skin-contact test evidence is pending.

### Branding & customisation

TO BE CONFIRMED

Fixed brand elements: raised FurlPay mark, NFC symbol, interior engraving. Personalised engraving or colourways are not described in the current documentation.

### Manufacturing path

SPECIFIED

Zirconia injection moulding → vacuum sintering (≈1,500 °C) → diamond grinding → polishing. Antenna, ferrite shield and secure element are sealed in medical epoxy. Contract manufacturer: to be confirmed.

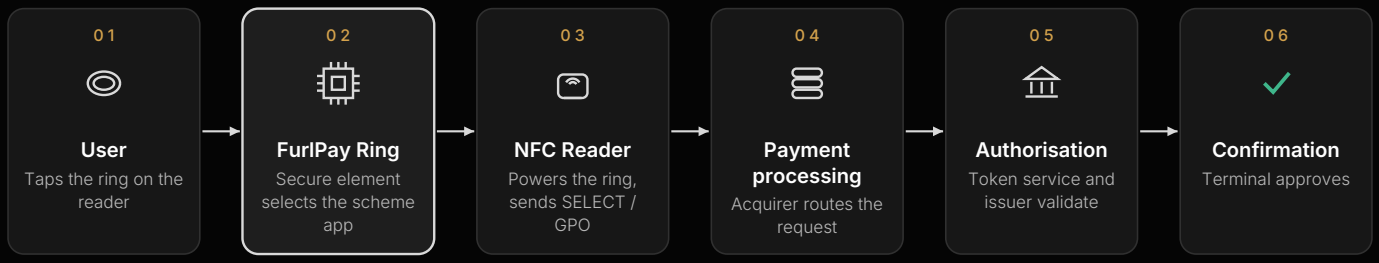
### INSIDE THE BAND

Layers specified from outside in: zirconia shell · medical epoxy · dual-loop copper antenna · secure element · 80 µm ferrite shield · ceramic liner. The ferrite layer keeps the antenna tuned against the water-rich tissue of a finger, which would otherwise detune it.

03 — CONTACTLESS PAYMENTS

# Tap to pay. Nothing to charge.

The ring presents a tokenised payment credential to any compatible EMV contactless terminal. Your real card number is never stored on the ring.




## PAYMENT WORKFLOW

### Provisioning — SPECIFIED

A card is added in the FurlPay app and routed to the card network's token service. A surrogate token (DPAN) and keys are written to the ring over an encrypted NFC session with the phone.

### Per-tap cryptogram — SPECIFIED

Each tap generates a one-time cryptogram bound to a transaction counter. A recorded tap cannot be replayed at another terminal.

### Verification limits — SPECIFIED

Below the local contactless limit no PIN is needed; above it the terminal requests PIN. The applet forces online authorisation after repeated rapid taps.

### Account management — SPECIFIED

Cards, tokens and the ring itself are managed in the app, including freeze and unfreeze.

## DOMESTIC CONTACTLESS (NO-CVM) LIMITS — SET BY NETWORKS & ISSUERS

| REGION | US | UK | EU | INDIA | HONG KONG |
|---|---|---|---|---|---|
| Typical limit | $100 | £100 | €50 | ₹5,000 | HK$1,000 |

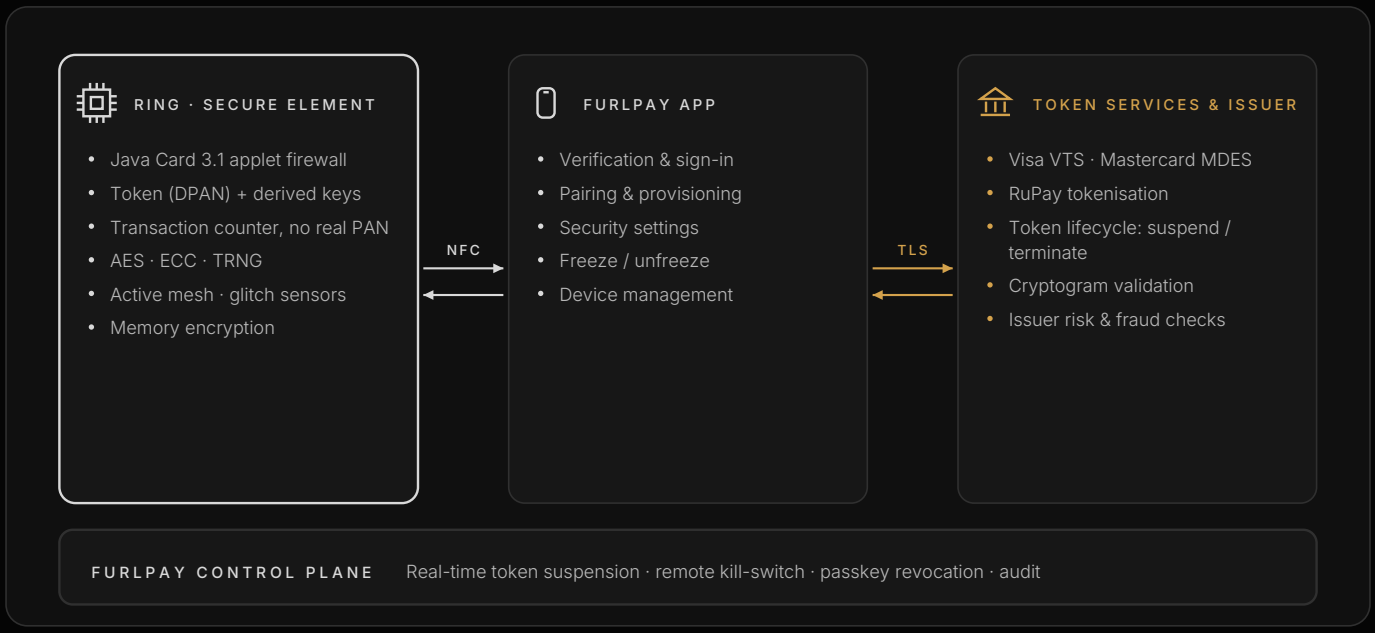
PARTNER-DEPENDENT

**Acceptance depends on partners.** Payments require issuer and card-network enrolment for tokenisation, supported terminals and local availability. Network approval status for Visa, Mastercard, RuPay and American Express is **to be confirmed**. Transaction notifications and receipts are not described in current documentation, and the ring does not work with every terminal.



04 — SECURITY ARCHITECTURE

# Security in layers, from silicon to cloud.




| CONTROL | WHAT IT DOES | STATUS |
|---|---|---|
| Secure element | Isolated applet contexts; hardware memory protection. Chip platforms named: Infineon SECORA Pay W / NXP SmartMX3 P71 (final selection TBC). EAL 6+ is a chip-platform claim; ring-level certificate not yet attached. | SPECIFIED |
| Tokenisation | The ring stores a token, never the card number. Token is bound to the ring's secure-element ID. | PARTNER-DEPENDENT |
| Provisioning & activation | Ephemeral AES-GCM session from a mutual Diffie–Hellman handshake between phone and ring. | SPECIFIED |
| Lost ring | Freeze in app suspends tokens at the token service; unfreeze restores without re-issue. Backend status TBC. | PARTNER-DEPENDENT |
| Auth & authorisation | Cryptogram per tap, CVM limits, online PIN above limit, velocity throttling in applet. | SPECIFIED |
| Fraud monitoring | Issuer-side risk scoring on every authorisation. FurlPay-side monitoring: not specified. | TO BE CONFIRMED |
| Privacy & data protection | No privacy architecture, retention policy or compliance certification is described in current documents. | TO BE CONFIRMED |

## DESIGNED-IN DEFENCES AGAINST COMMON ATTACKS

### Skimming & cloning
No static card data on the ring. Each tap yields a one-time cryptogram.

### Replay & relay
Per-tap counter; DESFire proximity check; very short NFC range.

### Loss & theft
Remote freeze; online PIN above limits; velocity throttling.

### Physical probing
Active shield mesh, glitch and light sensors, encrypted memory (chip platform).

TO BE CONFIRMED

**Implemented vs. planned.** This page describes controls as designed. No penetration-test report, security audit or ring-level certificate was supplied, so no control is described as independently verified and no certification is claimed.

05 — BATTERYLESS NFC

# Powered by the tap. Not by a battery.

A passive NFC device harvests a few milliwatts from the reader's 13.56 MHz magnetic field — enough to run a secure element for the length of a transaction, and nothing more.





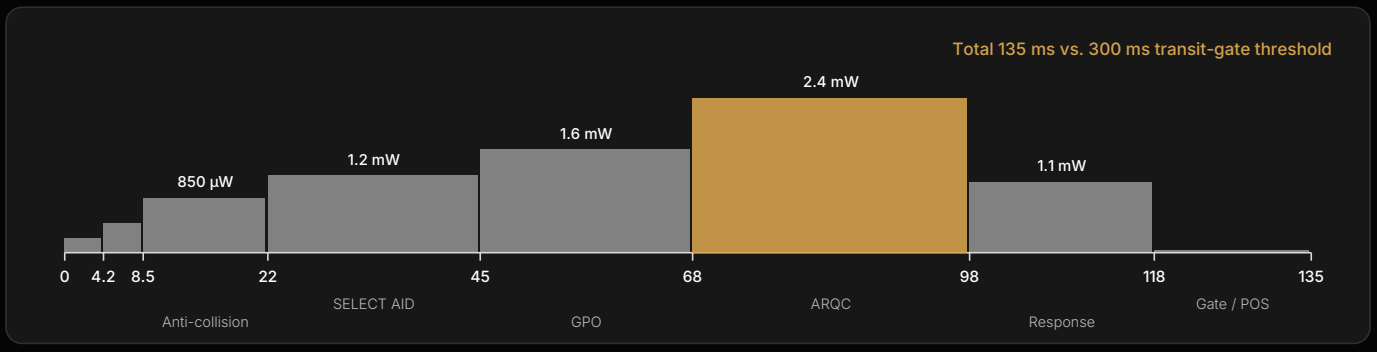
ILLUSTRATIVE CUTAWAY RENDER

## HOW THE ENERGY IS MANAGED

Faraday induction produces roughly 3.5–5 V peak-to-peak at the antenna. A full-wave rectifier converts it to DC, a shunt limiter caps it at 3.6 V near high-power readers, and an LDO regulator supplies a clean 1.8 V rail to the secure element. An on-chip tuning bank keeps resonance at 13.56 MHz as the ring's position changes; a ferrite layer stops the finger detuning the antenna.

SPECIFIED

## TRANSACTION TIMELINE — DESIGN BUDGET (MILLISECONDS FROM ENTERING THE FIELD)




## Operating limitations

- Works only while inside a reader's field — typically within a few centimetres.
- Powers the secure element and antenna only; it cannot run sensors, displays or radios.
- Reader field strength and geometry affect read range and speed.
- Not every terminal or gate is compatible; acceptance is certified per scheme and operator.

## Design targets

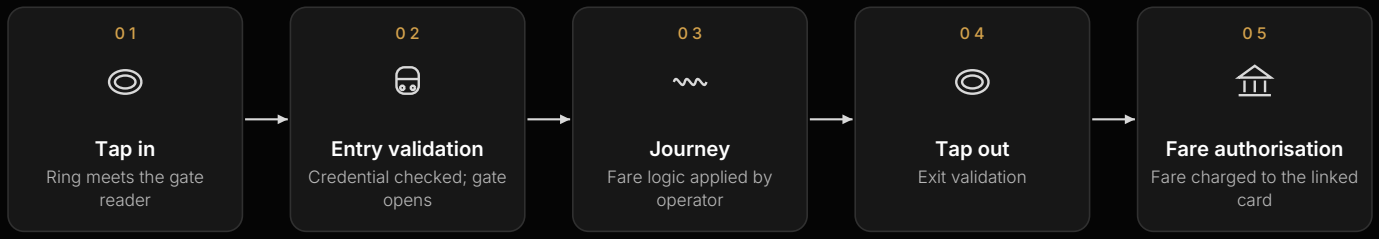
TO BE CONFIRMED

- No battery to degrade: 10+ year operating life is the design goal.
- Read range up to ~3.5 cm from the reader bezel.
- Best coupling with the flat face of the ring parallel to the reader.
- Range, timing and lifespan to be validated on production units.

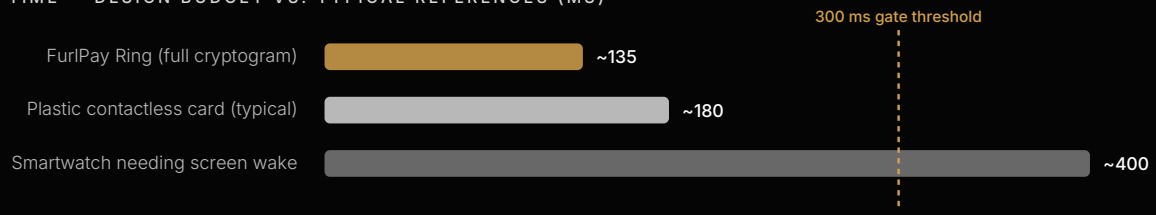
06 — TRANSIT & MOBILITY

# Walk through. Without breaking stride.

Many cities accept ordinary contactless bank credentials at the gate. A ring that carries a tokenised card can tap in and out like a card, with fares charged to the same account.




HANDSHAKE TIME — DESIGN BUDGET VS. TYPICAL REFERENCES (MS)




OPEN-LOOP ACCEPTANCE — SYSTEMS NAMED IN THE SPECIFICATION

| SYSTEM | REGION | RAIL | STATUS |
|---|---|---|---|
| TfL (London) | United Kingdom | Visa · Mastercard · Amex | TO BE CONFIRMED |
| OMNY (New York) | United States | Visa · Mastercard · Amex | TO BE CONFIRMED |
| MTR (Hong Kong) | Hong Kong SAR | Visa · Mastercard | TO BE CONFIRMED |
| RATP / Île-de-France | France | Open-loop bank cards | TO BE CONFIRMED |
| SimplyGo (Singapore) | Singapore | Visa · Mastercard | TO BE CONFIRMED |
| Opal (Sydney) | Australia | Contactless bank cards | TO BE CONFIRMED |
| Ventra (Chicago) | United States | Contactless bank cards | TO BE CONFIRMED |
| Tokyo (pilot gates) | Japan | Visa · Mastercard pilots | TO BE CONFIRMED |

PARTNER-DEPENDENT

Transit access needs a compatible transit system and an eligible provisioned credential. The specification lists these systems as targets; per-system verification, with test dates, has not been supplied, so none is claimed here as confirmed.



07 — AUTOMOTIVE & SMART ACCESS

# Keys, doors and charge points. One tap.

## Automotive keyless entry

PLANNED

The design emulates an NFC key card for Tesla Model 3, Y, S and X, presented at the B-pillar reader and the centre console. The challenge-response uses NIST P-256 ECDH.

**ISO/IEC 14443-A**
ATQA 0x0004 · SAK 0x20

**FRAME SIZE**
FSCI ≥ 6 → 96–256 byte frames; handles the ~86-byte challenge in one frame

**CHALLENGE**
Ephemeral car public key + 128-bit nonce → 128-bit response

**PAIRING**
Controls → Locks → Keys → Add Key, then tap the ring and an existing key card

EV charging: emulation of ISO 15118 user-token credentials for Plug & Charge is specified for networks such as Electrify America, EVgo and Ionity.

## Smart locks & enterprise access

PARTNER-DEPENDENT

Separate applets emulate access credentials so a lock only ever sees an access application — never the payment application.

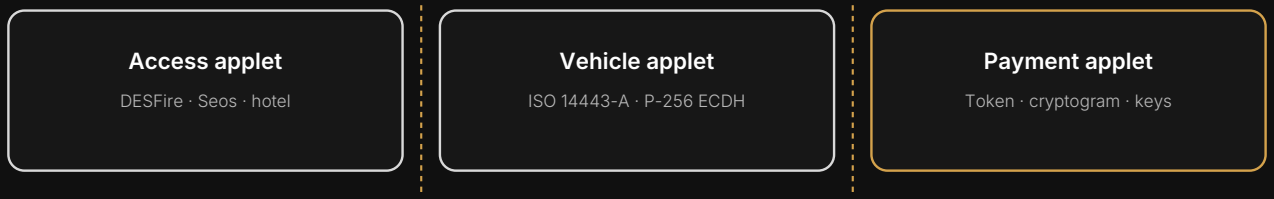
**WORKPLACE & CAMPUS**
MIFARE DESFire EV2/EV3 (128-bit AES, proximity check) and HID iCLASS Seos emulation

**HOTELS**
Room keys provisioned over the air for ASSA ABLOY VingCard, dormakaba Saflok and Salto locks

**RESIDENTIAL**
Compatible smart locks that accept NFC credentials

**LICENSING**
Credential formats and key management require vendor agreements — status TBC

APPLET ISOLATION INSIDE THE SECURE ELEMENT




Java Card firewall: one applet cannot read another applet's memory

TO BE CONFIRMED

**Demonstrated vs. future.** No demonstration recordings, vehicle-maker approvals or lock-vendor certifications were supplied. Every item above is a design intent until evidence is attached.

08 — DIGITAL IDENTITY

# Present yourself with a tap.

The same secure element that protects payment credentials can hold passkeys and present a contactless profile — turning physical presence into cryptographic proof.

## PASSWORDLESS SIGN-IN — FIDO2 / WEBAUTHN (CTAP 2.1)

SPECIFIED

01
**Website asks**
Browser issues a WebAuthn challenge with the site's domain

02
**Tap the ring**
Proximity to the NFC reader is the user-presence signal

03
**Domain check**
Credential is bound to the genuine domain; lookalikes are refused

04
**Sign**
ECDSA P-256 signature made inside the secure element

05
**Signed in**
Assertion returned; no password typed

## CONTACTLESS PROFILE — NFC FORUM NDEF

SPECIFIED

01
**Tap a phone**
Any modern iPhone or Android phone

02
**Notification**
OS shows a link prompt — no app needed

03
**Profile opens**
Verified FurlPay digital card: name, title, company, links

### Credential lifecycle

SPECIFIED

- Issue — keys generated inside the ring; private keys never leave the die.
- Bind — passkey tied to a relying-party domain.
- Use — each tap proves presence; counters prevent replay.
- Revoke — passkeys revoked from the app or control plane.
- Replace — new ring, new credentials; old ones invalidated.

### What is and is not claimed

TO BE CONFIRMED

- FIDO2 / CTAP 2.1 is described in the design; FIDO Alliance certification is not evidenced.
- Phone and browser support for NFC security keys varies by platform and version.
- Listing specific websites as supported would be premature; compatibility is per relying party.
- vCard profile hosting and editing in the FurlPay app: to be confirmed.

09 — FURLPAY ECOSYSTEM

# A physical credential for a wider financial platform.

The ring is the tap point. The FurlPay app manages it, and the FurlPay platform sits behind. Not every platform feature is available through the ring.

TIER 1 — PHYSICAL CREDENTIAL

**FurlPay Smart Payment Ring** — SPECIFIED

Passive NFC · secure element · tokens and keys

TIER 2 — MANAGEMENT

**FurlPay app** — SPECIFIED

Sign-in · pairing · provisioning · freeze / unfreeze · settings

TIER 3 — FURLPAY PLATFORM SERVICES

**User wallet**
Account holder identity and balances
TO BE CONFIRMED

**Payment accounts**
Funding sources behind each credential
TO BE CONFIRMED

**Digital cards**
Virtual cards alongside the ring
TO BE CONFIRMED

**Payment credentials**
Tokens provisioned to the ring
SPECIFIED

**Transaction history**
Activity per card, ring and credential
TO BE CONFIRMED

**Device management**
Pair, freeze, retire rings
SPECIFIED

**Security settings**
Limits, alerts, passkeys
PLANNED

**Developer APIs**
Programmatic access to platform services
TO BE CONFIRMED

**Multi-rail payments**
Stablecoin and other rails — ring path TBC
TO BE CONFIRMED

**AI-assisted workflows**
Not described for the ring
TO BE CONFIRMED

TO BE CONFIRMED

Ring payments travel over the card networks' token services; stablecoin and multi-rail infrastructure is a separate FurlPay platform capability. How the two connect — for example funding a ring token from a stablecoin balance — is not described in the supplied documentation and is not claimed.

10 — SETUP & USER JOURNEY

# From box to first tap.

The proposed onboarding follows the provisioning flow in the specification. The time to provision a credential to the ring is specified as under 8 seconds; end-to-end onboarding time depends on verification steps still to be defined.

1 **Open the FurlPay app**
Download the app on an NFC-capable iPhone or Android phone.
SPECIFIED

2 **Sign in & verify**
Create an account and complete required verification (requirements TBC).
TO BE CONFIRMED

3 **Pair the ring**
Tap the ring on the phone's NFC area to register it and open a secure channel.
SPECIFIED

4 **Provision credentials**
Add an eligible card; the token service issues a token written to the ring.
PARTNER-DEPENDENT

5 **Set security preferences**
Choose limits, alerts and freeze controls.
PLANNED

6 **Activate**
Confirm activation in the app. The ring is ready.
SPECIFIED

7 **Make a payment**
Tap the ring on a contactless terminal.
SPECIFIED

8 **Manage or replace**
Freeze or unfreeze in the app; retire a lost ring and pair a new one.
SPECIFIED

### REPLACEMENT & DEACTIVATION

If a ring is lost, tap Freeze Ring in the app. Tokens are suspended at the token services, so even an offline tap should be declined by the bank network. If the ring turns up, Unfreeze restores it without re-provisioning. A permanently lost ring's tokens are terminated and a replacement is paired.

11 — TECHNICAL SPECIFICATIONS

# Specification sheet.

Values are taken from the engineering specification v3.4.0. “Specified” does not mean independently tested. Anything without source documentation reads **To be confirmed**.

| FIELD | VALUE | STATUS |
|---|---|---|
| Product name | FurlPay Smart Payment Ring | SPECIFIED |
| Form factor | Finger ring; flat-fronted band with raised face panel | SPECIFIED |
| Material | Yttria-stabilised zirconia ceramic (Y-TZP), per specification | SPECIFIED |
| Finish | Black; matte face with polished edges (reference render). Specification states high-gloss — to be reconciled | TO BE CONFIRMED |
| NFC standard & frequency | ISO/IEC 14443-A · 13.56 MHz · 106–848 kbps; EMV contactless | SPECIFIED |
| Secure element | Infineon SECORA Pay W or NXP SmartMX3 P71; Java Card 3.1, GlobalPlatform 2.3.1. Final part selection: to be confirmed | TO BE CONFIRMED |
| Power requirements | Passive — inductively powered by reader field (1.5–7.5 A/m); 1.8 V internal rail | SPECIFIED |
| Battery requirements | None | SPECIFIED |
| Connectivity | NFC only. No Bluetooth or other active radio on the ring (a BLE mention in the specification conflicts with a batteryless design and is excluded) | SPECIFIED |
| Water resistance | 10ATM target (100 m). Test certificate to be confirmed | TO BE CONFIRMED |
| Durability | 8.5–9.0 Mohs target; −20 °C to +70 °C; 2 m drop target. Test reports to be confirmed | TO BE CONFIRMED |
| Supported payment credentials | Visa, Mastercard, RuPay, American Express designed in. Network approvals and certification: to be confirmed | PARTNER-DEPENDENT |
| Device compatibility | NFC-capable iPhone and Android phones for provisioning. Minimum OS versions: to be confirmed | TO BE CONFIRMED |
| Available sizes | US 6–13; width 8.0–8.2 mm; thickness 2.5–2.8 mm; mass 4.6–5.4 g | SPECIFIED |
| Security architecture | Secure element, tokenisation, per-tap cryptograms, applet isolation, remote freeze (see Security Architecture) | SPECIFIED |
| Provisioning requirements | FurlPay app; eligible card; token-service enrolment by issuer and network; verification steps to be confirmed | PARTNER-DEPENDENT |

## EVIDENCE NEEDED BEFORE PUBLIC RELEASE

- EMVCo Level 1 and Level 2 approvals, per scheme
- Chip-platform and ring-level security certificates
- ISO 10993 skin-contact test reports
- FIDO Alliance certification, if claimed
- Token-service enrolment with Visa, Mastercard, RuPay and American Express
- 10ATM water-resistance and hardness test reports
- Transit, vehicle and lock interoperability test logs
- Final secure-element part selection and BOM

12 — USE CASES

# Everyday moments, one tap each.






### Everyday shopping

Tap at any compatible contactless terminal. Below the local limit, no PIN is needed.

SPECIFIED

### Restaurants & hospitality

Pay at the table or counter without handing over a card.

SPECIFIED

### Travel & transit

Tap in and out at open-loop gates where the operator accepts contactless bank credentials.

PARTNER-DEPENDENT

### Hotels

Room keys provisioned to the ring for supported lock systems.

PARTNER-DEPENDENT

### Workplace access

Offices, campuses and turnstiles using supported badge formats.

PARTNER-DEPENDENT

### Automotive access

Vehicle key card emulation and EV charging authorisation.

PLANNED

### Digital identity

Passkey sign-in and contactless profile sharing with a phone.

SPECIFIED

### Contactless experiences

Tap-to-open links and profiles; further experiences to be defined.

TO BE CONFIRMED

13 — FREQUENTLY ASKED QUESTIONS

# Questions, answered plainly.

### + How does the ring work?

The ring contains an NFC antenna and a secure element. When tapped on a reader, the reader's field powers the chip, which presents a tokenised credential.

### + How are payment credentials protected?

The ring stores a token and keys, not your card number, inside a secure element. Each tap uses a one-time cryptogram.

### + Does it work with every payment terminal?

No. It targets EMV contactless terminals. Acceptance depends on terminal, issuer and network support.

### + Can I connect it to my FurlPay account?

Yes: the ring is paired and managed through the FurlPay app. Which account features it can draw on is to be confirmed.

### + How do I activate it?

Open the app, sign in, tap the ring on the phone to pair, add an eligible card and confirm activation.

### + Does it support transit and smart access?

Designed to, subject to compatible systems, provisioning and vendor agreements. See the Transit and Smart Access pages for status.

### + Does it require a battery?

No. It is passive and powered by the reader for the duration of the tap. Range is therefore short, a few centimetres.

### + What happens if the ring is lost?

Freeze it in the FurlPay app to suspend its tokens. Unfreeze if found. Permanent loss: tokens are terminated and a replacement is paired. Backend status: to be confirmed.

### + Can I use it internationally?

Designed for multi-region use, but availability by country, network and issuer is to be confirmed.

### + Is it waterproof?

The design target is 10ATM (100 m). A test certificate has not been supplied, so no rating is claimed yet.

### + How do I deactivate it?

Use Freeze Ring in the app to suspend credentials. Permanent deactivation: to be confirmed.

FurlPay
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THE FURLPAY SMART PAYMENT RING

# Tap. Pay. Go.

A smarter way to pay, access and identify.

WEBSITE
furlpay.com

CONTACT
founder@furlpay.com

PRODUCT INQUIRIES
furlpay.com/talk-to-us

Specifications are from engineering specification v3.4.0 and may change before release. Imagery is product rendering. Payment, transit, vehicle, access and identity functions depend on third-party systems, agreements and certification, and may not be available in all regions.

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