Blockchain-Powered Smart Access Control System

1. Core Technology: The Power of Blockchain

Traditional access control systems rely on centralized databases, which are vulnerable to **Single Point of Failure** and risks of internal data tampering.

- **Decentralized Architecture:** Permission data is stored across a distributed network, making the system significantly more resilient.

- **Immutability:** Once entry/exit logs are recorded on the blockchain, they cannot be modified or deleted, ensuring 100% audit integrity.

- **Cryptographic Authentication:** Moving beyond easily replicable RFID technology, our system utilizes asymmetric cryptographic signatures for identity verification.

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2. Product Advantages

Feature	Traditional Access Systems	TNP Blockchain Access System
Security	Vulnerable to skimming and card cloning.	Hardware-level private key protection; non-replicable.
Data Reliability	Administrators can manually edit logs.	Blockchain certification; records are permanent and immutable.
Authentication	Simple proximity-based verification.	FortVax Cold Wallet multi-layer cryptographic signatures.
System Architecture	Centralized server; susceptible to cyber-attacks.	Distributed nodes with high defensive capabilities.

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3. Hardware Integration

- **All-in-One Functionality:** Serves both as a cold wallet for digital assets and a high-tier corporate access pass.

- **Military-Grade Chip:** Equipped with a high-security **Secure Element (SE)** to ensure private keys never leave the card.

- **High Compatibility:** Supports NFC technology, allowing seamless integration into existing smart building infrastructures.

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4. Application Scenarios

- **Corporate Headquarters:** Prevents confidential leaks and enables precise tracking of access to core high-security zones.

- **Financial Institutions:** Meets the highest standards for regulatory compliance and auditing requirements.

- **Smart Communities:** Elevates residents' security levels and enables decentralized property management.

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5. About TNP (Taiwan Name Plate)

Founded in 1971, **Taiwan Name Plate Co., Ltd. (TNP)** has a long-standing history in high-end card manufacturing and secure printing. With the advent of the Web3 era, we have successfully transformed into a **FinTech service provider**, dedicated to integrating blockchain technology into everyday life.