



A multi-path VPN tunnel with layered encryption and tamper resistance

## Mission Focus

Today's digital communication systems are vulnerable to surveillance, interception, and disruption especially when traffic depends on a single network path or provider. Traditional VPNs offer limited protection where trust is placed in one channel, and many security architectures fail to account for coordinated or layered threats.

To address these liabilities SurePath delivers a purpose-built, out-of-band networking appliance that splits traffic across multiple independent WAN links and applies layered encryption at each stage. This hardened, multi-layered data path encrypts and splits traffic across independent WAN links, dramatically reducing the risk of interception or correlation.

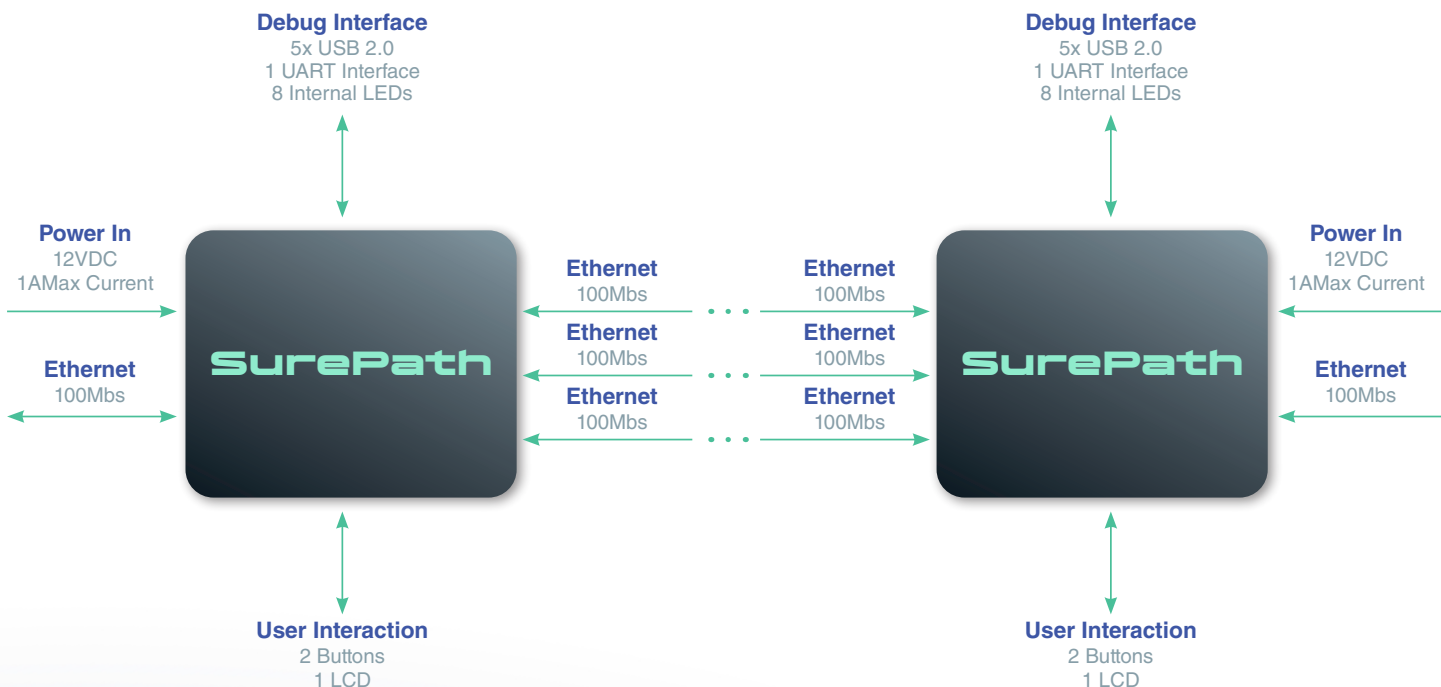
By combining layered encryption, multi-path routing, traffic profile obfuscation, and hardened OS features, SurePath ensures resilient, private, and tamper-resistant communication between trusted endpoints, even in hostile or untrusted environments.

## Key Features

- **Multi-layer Encryption:** using WireGuard and IPSec for secure, unlinkable traffic.
- **Multipath TCP:** to eliminate reliance on any single network and reduce correlation risk.
- **Traffic Obfuscation and Profile Diversification:** each WAN path simulates a different traffic pattern to mask real activity and confuse analysis.
- **Chaffing, Padding, and Cover Traffic:** fake packets, size normalization, and idle-period cover traffic defend against flow inspection and timing analysis.
- **Physically isolated compute layers:** each handling a specific security function, ensuring strict compartmentalization, and minimizing the impact of any single point of compromise.
- **Advanced Security Hardening:** Secure Boot verifies trusted firmware at startup, a Trusted Platform Module (TPM) protects cryptographic keys, and a read-only root filesystem prevents unauthorized changes.

**SurePath** is designed to provide robust and secure communication. Each unit contains one LAN-side Ethernet port and three WAN-side Ethernet ports. The system also has a power input, a service/debug interface, and a basic user interface. A pair of SurePath devices is deployed at each end of the communication path to securely tunnel and reassemble traffic with full end-to-end protection.

## SurePath System Architecture



SurePath is designed with a layered defense strategy that includes both hardware and software measures to resist tampering, unauthorized access, and runtime compromise.

Two Six Technologies has a strong track record of delivering high-impact solutions in mission-critical environments that demand privacy, resilience, and zero-trust network design, backed by deep expertise in building custom secure embedded systems. Contact us at the email address below to learn more.

Learn more about



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### About Two Six Technologies

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