

The Privoro Platform

Closing the mobile hardware security gap.



CLOUD-INTEGRATED MANAGEMENT TOOLS

- User Management
- Device Management
- Policy Management
- Secure Communications



SAFECASE

- Trusted Hardware
- Anti-Surveillance



MODULAR BACKPACKS

- Extend Services
- Extend Functionality
- Development Partner Opportunities

To stay ahead of the ever-increasing reach and sophistication of smartphone exploits, organizations can no longer assume that their users' mobile devices are trustworthy. The high-security system architecture of the Privoro Platform addresses the "hardware gap" in commercial systems, protecting against chip-based vulnerabilities and providing a hardware root of trust for the broader system. Privoro puts organizations back in control by providing trusted security services via an intelligent mobile platform.

At the heart of the Platform is the SafeCase, a high-security, intelligent and extensible smartphone case for the iPhone 7 or 8 on which modular backpacks can be added for additional services and functionality. An iOS app and cloud-integrated SaaS services – including machine learning, analytics and a robust policy engine – provide additional functionality, all accessed via a secure, dual-tunnel-encrypted communications channel.

Platform Technical Detail

SAFECASE

Hardware root of trust

- A unique key pair is generated, bound and exclusively contained within a single secure chip.
- Built and provisioned within a US-based, ITAR-compliant facility utilizing embedded supply-chain protections.

Trusted execution environment

- Secure boot
- Secure firmware
- Secure updates
- Code signing

Tamper protection

- The SafeCase is physically sealed and tamper-resistant.
- The SafeCase has a variety of protections against side-channel attacks.

Isolated components

- Closed-system architecture.
- The SafeCase's processor is used exclusively for running authenticated firmware.

Motion sensors

A nine-axis inertial measurement unit (IMU) – which includes a three-axis gyroscope, accelerometer and magnetometer.

Wireless data technologies

WiFi, Bluetooth and NFC – enable communication with local devices, including the paired smartphone.

- Permanent wireless disablement option available.

Digital signal processor

- For audio quality, voice masking and audio path control.

GPS module

- Enables location tracking for policy management purposes.

Protection from audio and video surveillance

- Audio protection: The SafeCase utilizes patented, proprietary technology to ensure that a conversation's content (the words spoken) and context (accents, tones, number of participants, etc.) are unidentifiable to even the most sensitive audio forensics equipment.
 - High-security, TRNG-based audio masking
 - Adaptive audio masking
 - Microphone-specific jamming
- Camera/video protection: A physical barrier over each of the smartphone's cameras prevents unwarranted third parties from observing or recording any visual data in the device's vicinity.

CLOUD-INTEGRATED

Robust management tools

- User management: The Portal provides administrative tools to manage new and existing users.
- Device management: The Portal allows for optional automated provisioning and status tracking.

- Policy management: The Portal makes it easy to establish and enforce policies at the individual, group or organization level.
- Non-repudiation: SafeCase events are recorded in a non-repudiable audit log.

SECURE COMMUNICATIONS

- Dual-tunnel encryption: Secured using a NIST-compliant, third-party-reviewed cryptographic architecture.
- Use of NIST-approved algorithms at CNSA-approved strengths to provide high assurance against cryptographic attacks.

- Perfect forward secrecy: Unique keys for each communication session are generated from verified ephemeral keys to protect communications against future compromise of the participant's identity keys.

MODULAR BACKPACKS

Incorporate new hardware functionality

The SafeCase is designed to seamlessly incorporate new hardware functionalities via a standardized backpack interface. Developed by Privoro or third-party

partners, backpacks are modular, detachable devices that may include sensors, communications modules and more. This modularity increases the efficiency of development by leveraging the platform's capabilities, services and trust.

