Feature	Foundation Passport Core	Coldcard Q	BitBox02 (Bitcoin-only)	Blockstream Jade Plus	Trezor Safe 5 / Safe 7	SeedSigner
Microcontroller	STM32 (ARM Cortex-M)	STM32 + dedicated QR serial interface	General-purpose MCU + secure chip	ESP32-S3 (dual-core, side-channel resistant)	STM32U5 (Safe 5) / Advanced MCU (Safe 7)	Raspberry Pi Zero (broadcom ARM)
Secure Element (SE)	Yes (Microchip ATECC608 series; split-key storage with XOR obfuscation)	Yes, dual multi-vendor (Microchip ATECC608C + Maxim DS28C36B)	Yes (ATECC608B; dual-chip split, epoxy potting)	No (virtual SE via blind oracle + strong encryption)	Safe 5: Single EAL6+ (OPTIGA Trust M) Safe 7: Dual (EAL6+ + open/auditable TROPIC01)	No (stateless design; no persistent storage)
Seed Storage	Encrypted/split in SE + MCU	Encrypted in dual SEs	Encrypted split across chips	Strongly encrypted on-device (blind oracle for PIN unlock)	Protected in SE(s); quantum-ready on Safe 7	Stateless (loaded into RAM per session; wiped on power-off)
Air-Gapped Operation	Fully (QR camera + microSD; no USB data)	Fully (QR scanner + microSD/NFC optional)	No (USB-C data required)	Fully capable (QR camera + microSD; Bluetooth disableable)	No (USB-C primary; Safe 7 adds encrypted Bluetooth)	Fully (QR only; no connectivity)
Entropy Generation	Avalanche noise TRNG + user dice rolls	Hardware TRNG (MCU) + SE contributions + dice	Multiple sources (TRNG on both chips)	TRNG + camera for verification	TRNG + PUF (Safe 7 via TROPIC01)	Camera-based physical randomness (dice/coins/environment)
Open-Source Level	100% (hardware schematics + firmware; reproducible builds)	Firmware yes; hardware partial (SE closed)	100% (firmware/app; reproducible; SE closed but minimal trust)	100% (hardware + firmware)	Firmware yes; Safe 7: TROPIC01 fully auditable/open	100% (hardware + software; DIY buildable)
Physical Tamper Resistance	Tamper-evident chassis + LED checks	Tamper-evident bag + genuine lights tied to SE	Epoxy potting + dual-chip	Hardware encryption + genuine check	High (EAL6+ cert + open audits on Safe 7)	Minimal (commodity parts; relies on statelessness)
Advanced Features	Encrypted microSD backups, BIP85, Taproot	Duress PINs, SeedVault (multi-seed), PSBTv2, HSM-like policies	Anti-klepto/exfil, microSD backups, Miniscript	SeedQR, Liquid Network, air-gapped upgrades	Safe 7: Post-quantum crypto, wireless charging	Dice-roll seeds, multisig QR workflows
Attack Surface Notes	Minimal connectivity; SE mitigates physical extraction	Lowest persistent risk (dual SE diversity)	Connected but anti-exfil strong	No SE but oracle prevents extraction	Safe 7 best vs. future threats (quantum/physical)	Zero persistence = minimal theft value