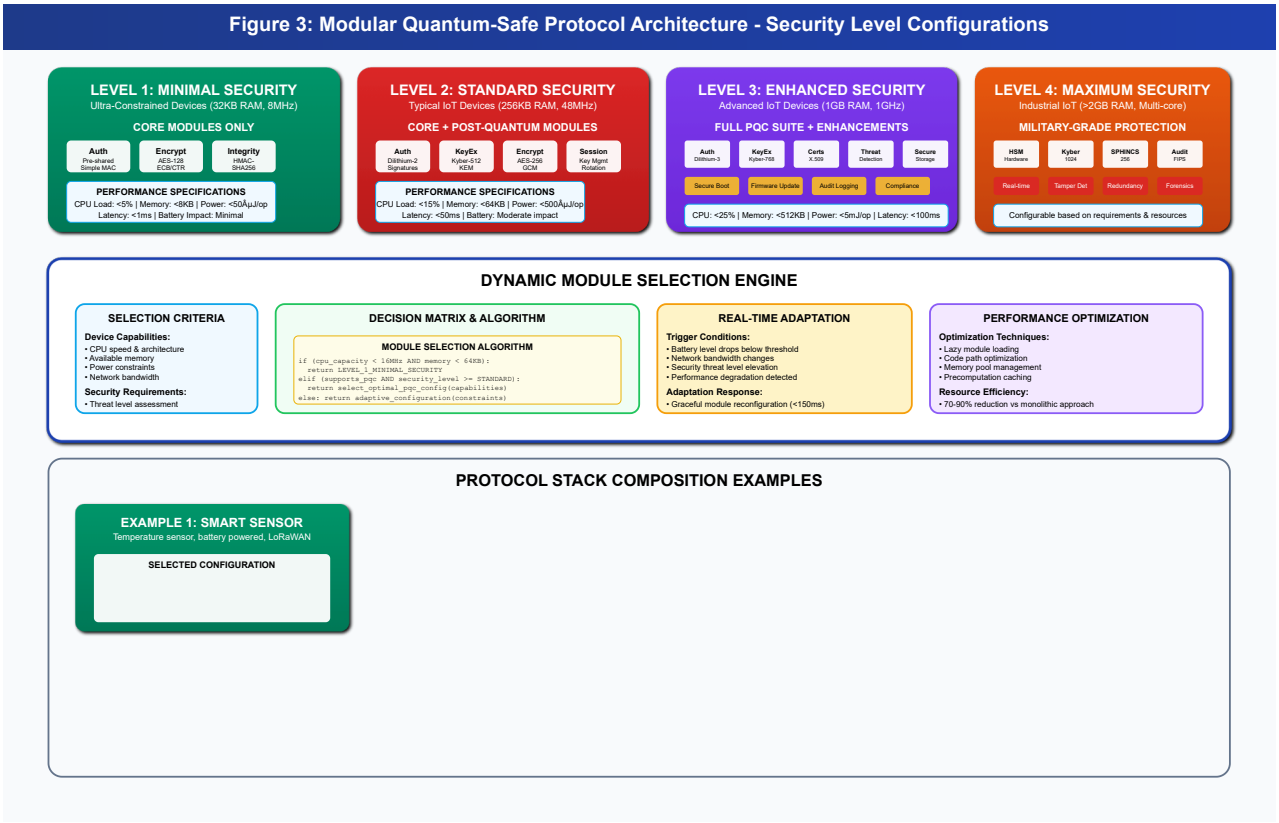
Patent_04_Figure_3

Technical Drawing - Patent Application



Security Level: Level 1 (Minimal) **Modules:** Pre-shared Auth + AES-128 + HMAC-SHA256 **Resource Usage:** 6KB RAM, 2% CPU, 35ÂµJ/op **Battery Life:** 5+ years, minimal security overhead EXAMPLE 2: SMART HOME HUB Home automation controller, WiFi connected SELECTED CONFIGURATION **Security Level:** Level 2 (Standard Post-Quantum) **Modules:** Kyber-512 + Dilithium-2 + AES-256 **Resource Usage:** 48KB RAM, 12% CPU, 420ÂµJ/op **Performance:** 35ms latency, quantum-safe EXAMPLE 3: INDUSTRIAL PLC Critical infrastructure, real-time control SELECTED CONFIGURATION **Security Level:** Level 4 (Military-Grade) **Modules:** HSM + Kyber-1024 + SPHINCS+ + Audit **Resource Usage:** 1.2MB RAM, 18% CPU, 1.8mJ/op **Compliance:** FIPS 140-2, Common Criteria DYNAMIC ADAPTATION Real-time configuration changes ADAPTATION SCENARIOS **Low Battery:** Level 2 â†' Level 1 (extend life) **High Threat:** Level 2 â†' Level 3 (more security) **Poor Network:** Enable compression & buffering **Adaptation Time:** <150ms seamless transition INTEROPERABILITY & COMPATIBILITY MATRIX Security Level Target Devices Core Algorithms Optional Modules Performance Power Budget Use Cases Compliance Level 1 8-bit MCU, 32KB AES-128, HMAC None <1ms, <5% CPU <50ÂµJ/op Sensors, Tags Basic IoT Level 2 32-bit ARM, 256KB Kyber-512, Dilithium-2 Session Mgmt <50ms, <15% CPU <500ÂµJ/op Smart Home IoT Security Level 3/4 Multi-core, >1GB Full PQC Suite All Available Variable, Optimized <10mJ/op Industrial FIPS/CC

Generated from: C:\Users\User\Patent_Extraction\Drawings\Patent_04_Figure_3.svg

Date: 2025-09-05 07:51