Apex Research Labs, LLC

Capabilities Statement • Applied cryptography and embedded hardware security • Henderson, Nevada

COMPANY DATA

Legal entity	Apex Research Labs, LLC (U.S. commercial LLC, small business)
CAGE code	**20EL7**
SAM.gov UEI	**DWTYDT3ZWJ11**
Primary NAICS	**541715**
R&D jurisdiction	100% domestic (USA)
Web / contact	apex256.com • info@apex256.com

WHAT WE DO

We build lightweight, constant-time cryptography for microcontrollers, telemetry links and other small devices that run infrastructure. Our flagship, APEX-256, is a 256-bit stream cipher: no heap, no lookup tables, no branches in the keystream path, and ciphertext exactly as long as plaintext. Patent applications are pending.

CORE COMPETENCIES

- **Embedded stream ciphers:** zero-heap, constant-time keystream engines for small devices.
- **Side-channel hardening:** branchless execution, no lookup tables, power and EM measurement on the bench.
- **Formal checks:** Z3 SMT bit-vector injectivity, weak-key and fixed-point analysis.
- **Hardware-in-the-loop test:** bladeRF 2.0 Micro SDR, Saleae Logic Pro 8 and Nordic PPK2 benches.
- **Target silicon:** ARM Cortex-M4/M7, Espressif ESP32-S3, Nordic nRF52840, RISC-V bare-metal firmware.

NAICS CODES

541715 R&D in the Physical, Engineering, and Life Sciences (primary)

541330 Engineering Services (Military & Aerospace Equipment and Weapons)

541512 Computer Systems Design Services

541519 Other Computer Related Services

334418 Printed Circuit Assembly Manufacturing

541690 Other Scientific and Technical Consulting

PSC CODES

AC12 R&D: Defense System: Aircraft (Applied Research / Exploratory Development)

AC22 R&D: Defense System: Missile & Space Systems (Applied Research)

AJ11 R&D: Physical Sciences: General (Basic Research)

7030 Information Technology Software

D302 IT and Telecom: Systems Development Services

R425 Support: Professional: Engineering / Technical Advisory

CONTRACTING AND TEAMING

Available as a prime or subcontractor, for teaming on SBIR / STTR topic transitions, and for Other Transaction Authority (OTA) consortia. Technical details, reference code and test data are available under an executed Apex Evaluation NDA.

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