

# DEFENSE ALPHA

## RF & Communications Emerging Company Report

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February 05, 2026

10 Prospects | Proprietary & Confidential

### Data Sources:

- 5,147 DoD contracts from USASpending.gov (2020-2025)
  - 1,653 SBIR awards with semantic embeddings
  - 1,979 SEC Form D filings
- Proprietary composite scoring across 13 signal types

## Executive Summary

This report identifies the 10 most promising emerging companies in the target technology sector of the U.S. defense industrial base. Companies were surfaced through semantic search over 1 technology query against 1,653 SBIR award titles, then filtered and ranked using Defense Alpha's composite scoring system, which weighs 13 intelligence signal types including SBIR phase progression, contract wins, private capital raises, multi-agency interest, and risk indicators.

### Scoring Methodology

**Composite Score:** Weighted sum of 13 signals (SBIR advancement, contract wins, VC raises, agency breadth, risk factors).  
Higher = stronger momentum.

**Relevance Score:** Semantic similarity between company R&D portfolio and target technology (0-1 scale).

**Final Rank:** 65% relevance + 35% normalized composite score.

## Top 5 Recommended Prospects

### 1. PHASE SENSITIVE INNOVATIONS INC

Series A | Composite: 5.47 | Relevance: 0.342

<http://www.phasesensitiveinc.com/>

*RADS - Radar Disruption Systems | Signals: SBIR->Contract, Fast Time-to-Contract, SBIR Phase II*

### 2. ZENITH AEROSPACE INC

Series A | Composite: 3.60 | Relevance: 0.412

<https://www.zenithaero.com>

*High Bandwidth Air-to-Air and Air-to-Ground Networked Communications for Unmanned Aerial System | Signals: SBIR + VC Raise, Funding Velocity, High-Priority Tech*

### 3. AscendArc, Inc.

Seed / Early | Composite: 4.50 | Relevance: 0.326

[www.ascendarc.com](http://www.ascendarc.com)

*Rapid, Scaleable Geosynchronous Communications | Signals: SBIR + VC Raise, SBIR Phase II, Fast SBIR Graduation*

### 4. NANTRAK TACTICAL LLC

Seed / Early | Composite: 3.25 | Relevance: 0.403

<https://www.nantrak.com/>

*TANGOTRAK Mesh Utility 40mm Projectile - Including Relay, Decoy, Beacon & Motion Sensor | Signals: SBIR Phase II, Fast SBIR Graduation, High-Priority Tech*

### 5. MATRIXSPACE, INC

Series B+ | Composite: 1.50 | Relevance: 0.528

<https://www.matrixspace.com>

*Distributed Dual-Mode Mesh Radar for Base Defense | Signals: SBIR + VC Raise*

## Analyst's Note

Defense Alpha identified 10 emerging companies with active programs in RF & Communications, backed by 26 SBIR awards totaling \$27.3M and \$60.0M in disclosed private capital across 5 companies. Sub-segment activity clusters around beamforming & directed RF (3), radar & sensing (2), mesh networking (2). 5 of 10 sit at Seed / Early stage (4 at Series A, 1 at Series B+) - a fragmented, early-stage vertical with consolidation opportunity.

Momentum is concentrated in companies pairing SBIR validation with private capital: ZENITH AEROSPACE INC, AscendArc, Inc., MATRIXSPACE, INC. A transition gap is visible: 6 hold Phase II awards while only 1 has won production contracts, suggesting the prototype-to-procurement valley of death remains a bottleneck. Watch ZENITH AEROSPACE INC, AscendArc, Inc., NANTRAK TACTICAL LLC for near-term movement based on acceleration signals.

Engage at the SBIR Phase II inflection point, where technology is government-validated but commercialization support is scarce - these companies are most responsive to strategic partnerships and most likely to convert to program-of-record suppliers.

## Ranked Prospect List

#	Company	Stage	Score	Relev.	Key Signal	Latest
1	PHASE SENSITIVE INNOVATIONS INC	Series A	5.47	0.342	SBIR->Contract	2024-09-01
2	ZENITH AEROSPACE INC	Series A	3.60	0.412	SBIR + VC Raise	2024-08-26
3	AscendArc, Inc.	Seed / Early	4.50	0.326	SBIR + VC Raise	2024-08-22
4	NANTRAK TACTICAL LLC	Seed / Early	3.25	0.403	SBIR Phase II	2024-09-11
5	MATRIXSPACE, INC	Series B+	1.50	0.528	SBIR + VC Raise	2024-07-01
6	TERASPATIAL INC	Series A	2.90	0.395	SBIR + VC Raise	2024-09-06
7	K2 SPACE CORPORATION	Series A	3.25	0.311	SBIR + VC Raise	2024-09-18
8	FOURTH STATE COMMUNICATIONS, LLC	Seed / Early	2.55	0.354	SBIR Phase II	2024-05-10
9	SOLSTAR SPACE COMPANY	Seed / Early	2.05	0.395	SBIR Phase II	2024-05-14
10	XL SCIENTIFIC LLC	Seed / Early	2.25	0.374	SBIR Phase II	2024-08-26

## Detailed Prospect Profiles

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### 1. PHASE SENSITIVE INNOVATIONS INC

**Location:** NEWARK, Delaware

**Website:** <http://www.phasesensitiveinc.com/>

**Stage:** Series A

**Composite Score:** 5.47 (+5.5 / 0.0)

**Technology Relevance:** 0.342

**Technology Focus:**

- RADS - Radar Disruption Systems
- Broadband Optical Combs in Thin Film Lithium Niobate

**Intelligence Signals:**

- [+] SBIR->Contract (+2.70)
- [+] Fast Time-to-Contract (+1.42)
- [+] SBIR Phase II (+1.35)

**Financial Summary:**

- 2 SBIR awards (\$2.0M)
- 1 contracts (\$8.9M)

**Recent Activity:**

- Latest SBIR: 2024-09-01
  - Latest contract: 2024-07-30
- 

### 2. ZENITH AEROSPACE INC

**Location:** BELMONT, California

**Website:** <https://www.zenithaero.com>

**Stage:** Series A

**Composite Score:** 3.60 (+3.6 / 0.0)

**Technology Relevance:** 0.412

**Technology Focus:**

- High Bandwidth Air-to-Air and Air-to-Ground Networked Communications for Unmanned Aerial System
- Stratospheric Long Range UAS

**Intelligence Signals:**

- [+] SBIR + VC Raise (+1.70)
- [+] Funding Velocity (+1.20)
- [+] High-Priority Tech (+0.70)

**Financial Summary:**

- 2 SBIR awards (\$2.5M)
- Private capital: \$9.7M

**Recent Activity:**

- Latest SBIR: 2024-08-26
  - Latest Reg D filing: 2024-04-04
-

### 3. AscendArc, Inc.

**Location:** PORTLAND, Oregon

**Website:** [www.ascendarc.com](http://www.ascendarc.com)

**Stage:** Seed / Early

**Composite Score:** 4.50 (+4.5 / 0.0)

**Technology Relevance:** 0.326

**Technology Focus:**

- Rapid, Scaleable Geosynchronous Communications
- Rapid, Scaleable Geosynchronous Bandwidth

**Intelligence Signals:**

- [+] SBIR + VC Raise (+1.40)
- [+] SBIR Phase II (+1.35)
- [+] Fast SBIR Graduation (+1.05)
- [+] High-Priority Tech (+0.70)

**Financial Summary:**

- 2 SBIR awards (\$1.9M)
- Private capital: \$2.0M

**Recent Activity:**

- Latest SBIR: 2024-08-22
  - Latest Reg D filing: 2023-11-17
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### 4. NANTRAK TACTICAL LLC

**Location:** FRANKLIN, Virginia

**Website:** <https://www.nantrak.com/>

**Stage:** Seed / Early

**Composite Score:** 3.25 (+3.2 / 0.0)

**Technology Relevance:** 0.403

**Technology Focus:**

- TANGOTRAK Mesh Utility 40mm Projectile - Including Relay, Decoy, Beacon & Motion Sensor
- TANGOTRAK 40mm Satellite Navigation Warfare & Communications Decoy Electronic Warfare Projectiles
- 40mm Rapid Perimeter Deployment System

**Intelligence Signals:**

- [+] SBIR Phase II (+1.35)
- [+] Fast SBIR Graduation (+1.09)
- [+] High-Priority Tech (+0.80)

**Financial Summary:**

- 3 SBIR awards (\$3.1M)

**Recent Activity:**

- Latest SBIR: 2024-09-11
-

## 5. MATRIXSPACE, INC

**Location:** BURLINGTON, Massachusetts

**Website:** <https://www.matrixspace.com>

**Stage:** Series B+

**Composite Score:** 1.50 (+1.5 / 0.0)

**Technology Relevance:** 0.528

**Technology Focus:**

- Distributed Dual-Mode Mesh Radar for Base Defense
- Low SWAP-C Multi-function Multi-band Antenna Payload

**Intelligence Signals:**

[+] SBIR + VC Raise (+1.50)

**Financial Summary:**

- 2 SBIR awards (\$3.1M)
- Private capital: \$32.2M

**Recent Activity:**

- Latest SBIR: 2024-07-01
  - Latest Reg D filing: 2023-05-24
- 

## 6. TERASPATIAL INC

**Location:** PALO ALTO, California

**Website:** <https://teraspatial.ai/>

**Stage:** Series A

**Composite Score:** 2.90 (+2.9 / 0.0)

**Technology Relevance:** 0.395

**Technology Focus:**

- HiBeam.AI: A Highly-Integrated AI-Infused mmWave Beamforming/MIMO System for Directional Wireless Networking in Air, Space, and Ground

**Intelligence Signals:**

[+] SBIR + VC Raise (+1.70)

[+] Funding Velocity (+1.20)

**Financial Summary:**

- 1 SBIR awards (\$75K)
- Private capital: \$7.3M

**Recent Activity:**

- Latest SBIR: 2023-12-15
  - Latest Reg D filing: 2024-09-06
-

## 7. K2 SPACE CORPORATION

**Location:** TORRANCE, California

**Website:** <https://www.k2space.com/>

**Stage:** Series A

**Composite Score:** 3.25 (+3.2 / 0.0)

**Technology Relevance:** 0.311

**Technology Focus:**

- Multi-Function Software Defined Phased Array Satellite Payload
- High Performance TacRS Constellation Satellite Platform
- High Powered Electric Propulsion System for Space Vehicles

**Intelligence Signals:**

- [+] SBIR + VC Raise (+1.50)
- [+] Funding Velocity (+1.05)
- [+] High-Priority Tech (+0.70)

**Financial Summary:**

- 3 SBIR awards (\$6.7M)
- Private capital: \$8.9M

**Recent Activity:**

- Latest SBIR: 2024-09-18
  - Latest Reg D filing: 2023-02-28
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## 8. FOURTH STATE COMMUNICATIONS, LLC

**Location:** CHEYENNE, Wyoming

**Stage:** Seed / Early

**Composite Score:** 2.55 (+2.5 / 0.0)

**Technology Relevance:** 0.354

**Technology Focus:**

- Beyond Line of Sight Communications Backhaul SWaP Improvements in support of AFSOC Capabilities in Contested Environments
- Improved Enhanced Thermo-Scatter System BLOS Communications Capability in Support of ACE
- Backhaul SWaP Improvements for Operations in Contested Environments

**Intelligence Signals:**

- [+] SBIR Phase II (+1.35)
- [+] Fast SBIR Graduation (+1.20)

**Financial Summary:**

- 4 SBIR awards (\$1.5M)

**Recent Activity:**

- Latest SBIR: 2024-05-10
-



## 9. SOLSTAR SPACE COMPANY

**Location:** SANTA FE, New Mexico

**Website:** [www.solstarspace.com](http://www.solstarspace.com)

**Stage:** Seed / Early

**Composite Score:** 2.05 (+2.0 / 0.0)

**Technology Relevance:** 0.395

**Technology Focus:**

- Radiation Hardened WiFi Access Point for Spacecraft
- Wide Band Continuous Spacecraft System Communications Terminal

**Intelligence Signals:**

[+] SBIR Phase II (+1.35)

[+] High-Priority Tech (+0.70)

**Financial Summary:**

- 2 SBIR awards (\$1.3M)

**Recent Activity:**

- Latest SBIR: 2024-05-14
- 

## 10. XL SCIENTIFIC LLC

**Location:** ALBUQUERQUE, New Mexico

**Website:** <https://verusresearch.net>

**Stage:** Seed / Early

**Composite Score:** 2.25 (+2.2 / 0.0)

**Technology Relevance:** 0.374

**Technology Focus:**

- Predictive M&S Framework for HEL Engagements of RF Seeker Threat Systems
- High Frequency, High Gain, High Power Microwave Antennas, Phase II
- Microwave Source with Frequency Tuning (MISFT)

**Intelligence Signals:**

[+] SBIR Phase II (+1.35)

[+] High-Priority Tech (+0.90)

**Financial Summary:**

- 5 SBIR awards (\$4.9M)

**Recent Activity:**

- Latest SBIR: 2024-08-26
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## Methodology

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This report was generated by the Defense Alpha Intelligence Engine using the following pipeline:

**Semantic Search:** SBIR award titles embedded with all-MiniLM-L6-v2 sentence-transformer (384-dimensional vectors). Cosine similarity measured against technology-specific queries.

**Signal Scoring:** Composite score computed from 13 signal types including SBIR progression, contract wins, VC fundraising, multi-agency interest, and risk indicators (customer concentration, SBIR stalling).

**Ranking:** 65% technology relevance + 35% composite signal score.

**Filtering:** Startups only, net-positive composite score, at least one positive signal, minimum 0.40 relevance score, excluding major defense primes.

**Search Queries:**

- "RF antenna radio tactical communications mesh networking spectrum"

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**Data Sources:**

- 5,147 DoD contracts from USASpending.gov (2020-2025)
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