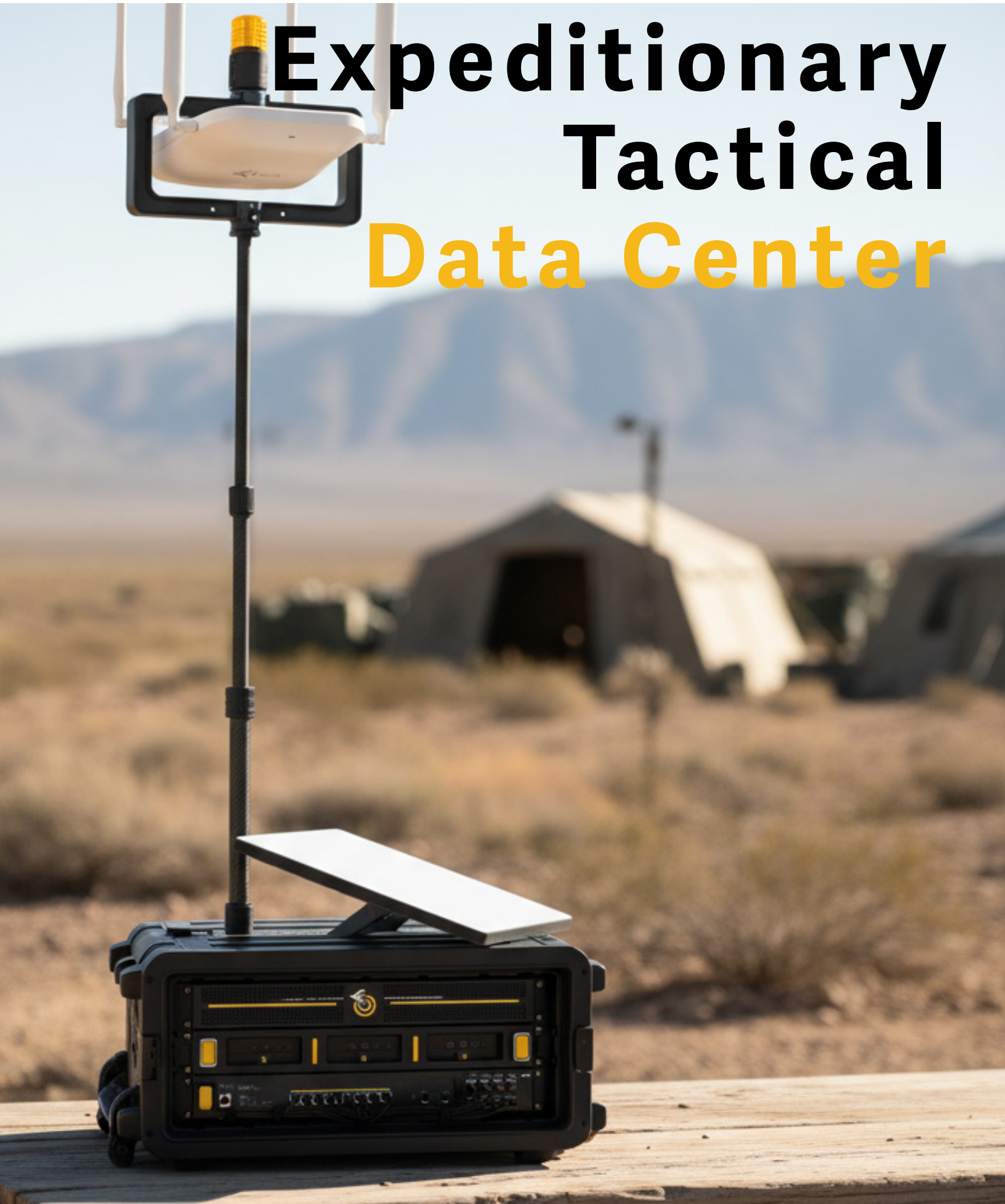
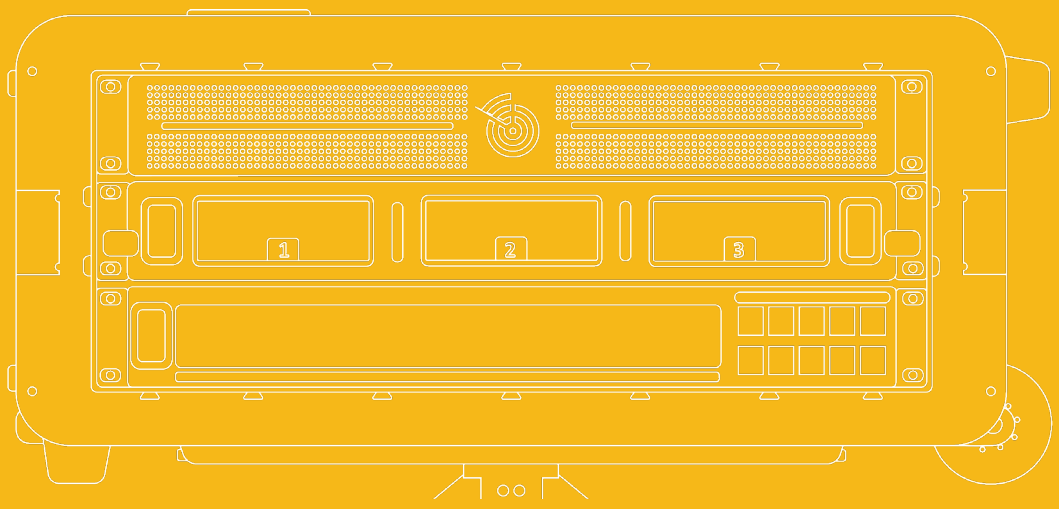
Expeditionary Tactical Data Center



OVERVIEW



The HiveRadar Portable Edge Data Center (P-EDC) is a purpose-built, cost effective portable data center optimized for light duty military and defence operations. It is designed to be deployed across a wide range of tactical environments - from small unit command posts and forward operating bases to medical treatment tents, vehicle-mounted tactical nodes, forward reconnaissance posts, and drone/ISR (Intelligence, Surveillance, Reconnaissance) operations in contested areas.

HiveRadar units support expeditionary and expeditionary-support tasks where low latency, resilient local compute and secure data collection are mission-critical.

FORM FACTORS AND DEFINITIONS

Portable edge solutions come in many shapes and sizes: everything from 40' ISO containers on trailers to rugged rack cases and bespoke lightweight enclosures. In defence parlance these are referred to as Tactical Edge Platforms, Tactical Edge Communications Kits, or Flight Cases.

True tactical P-EDC solutions are purpose-designed enclosures that are lightweight, ruggedized for shock/impact/vibration, and capable of single-person carriage and rapid emplacement/removal by trained operators.

COMMON MISCONCEPTIONS AND INDUSTRY PRACTICE

Many vendors market “tactical” or “carry-on friendly” systems with misleading claims. Common issues include:

- Integrated battery packs that exceed 100 Wh and therefore cannot be checked or carried in many commercial aircraft under FAA/TSA rules.
- Stated weights (e.g., 65 lb) that exceed commercial carry-on allowances.

- **Nested protection masquerading as ruggedization:** Vendors will show ruggedized drop tests or shock ratings for their flight cases, but those same cases are being carried inside larger, heavily padded transit cases during transport or testing. This nesting invalidates the implied single-case ruggedness claim and misleads buyers about the unit’s true field survivability.

- Proprietary HCI (hyperconverged infrastructure) & monitoring software lock-in, that mandates costly licensing and complex vendor-specific upgrades.

- **Selective testing and staged video editing:** Marketing videos sometimes splice different test frames together to imply greater robustness than actually demonstrated. Examples include showing a 6-foot drop test on a unit fitted with reinforced bumpers (riveted or screwed on), then immediately cutting to a water ingress test on a different configuration without bumpers - which avoids directing jets at lid gaps or bumper screw holes. Videos frequently fail to show the internal contents or the operational state of electronics after each test, so there is no way to validate whether the sensitive mission payload survived in working condition.

When a tactical edge unit costs well over $100k and contains critical mission systems, the operational response is conservative: units must be carefully handled and are not treated as disposable. This creates logistical burden and risk when lives are at stake.

WHAT DIFFERENTIATES HIVERADAR P-EDC

HiveRadar's light duty tactical P-EDC addresses the above operational shortfalls by delivering a pragmatic, purpose-built, and affordable alternative.

Cost Effective

Typically priced at one-third to one-quarter of many bespoke tactical solutions (configuration dependent), reducing procurement and sustainment burden for units and defence agencies.

Open and upgradeable

Multi-vendor HCI support. Curated and carefully selected standardized rack components and modular compute nodes allow field replacement, upgrades, and lifecycle management with easily replacable spare parts.

Rugged but field-serviceable

Enclosures are engineered to survive shock, vibration and small accidental drops expected in light duty tactical deployments while allowing quick access by trained maintainers.

True portability

Options include single-person carry cases and stationary vehicle deployable packs - designed to match realistic operator weight and footprint constraints.

Designed for mission use

Uses enterprise-grade, commercially available components and standard connectors for cost efficiency and global serviceability. Supports AC power input, easily augmented with HiveRadar's optional off-grid UPS battery, solar input, dual-fuel generator, or EV-based Vehicle-to-Load (V2L) systems for extended autonomous operation.

LIGHT DUTY TACTICAL USE CASES

Unmanned systems and ISR

Low-latency ingest and processing of drone video, sensor telemetry, object detection models, and tactical analytics at the point of collection.

Forward command posts / small tactical operations centres

Local compute for mission planning, mapping, and shared situational awareness without reliance on contested or congested backhaul.

Vehicle-mounted deployments

While the HiveRadar P-EDC is not intended for operation in moving vehicles in rough terrain, it is designed for rapid carry-on and emplacement from vehicles - enabling teams to deploy the system on site (on or off the vehicle), and operate stealthily using modern EV platforms and Vehicle-to-Load (V2L) power sources for extended, low-signature missions.

Recon / surveillance outposts

Short-duration deployments that require high compute density, encrypted storage, and simple field maintenance.

Medical & casualty care nodes

Local imaging, patient records, telemedicine and encryption for controlled transfer to higher echelons.

LOGISTICS, MAINTAINABILITY & LIFECYCLE

- Field-replaceable modules: Standardized compute nodes, storage trays and network connectivity devices that can be replaced by a common maintainer without vendor-only tools.
- Spare parts strategy: Lower unit cost enables distributed spares in theatre, reducing mean time to repair (MTTR) and improving operational readiness.
- No opaque licensing traps: Software choices avoid mandatory annual vendor lock-in fees that can balloon TCO over multi-year deployments.

OFF-GRID POWER & EV/HYBRID INTEGRATION

Many NATO and allied forces are introducing EV/Hybrid platforms and vehicle electrification for mobility and acoustic/thermal stealth. Examples of modern military and commercial vehicles include V2L (vehicle-to-load) capable platforms that provide usable DC/AC power in the field. HiveRadar's low-power P-EDC footprint is deliberately designed to:

- Operate from vehicle power systems (V2L/V2H) for days of continuous operation when combined with compatible vehicle platforms.
- Operates primarily on standard AC power input but can draw power from multiple field sources - including vehicle-based inverters on EV with V2L outlets, tactical generators, solar inverters, and HiveRadar's off-grid UPS battery modules - with intelligent power management to optimize runtime and reliability in diverse field conditions.
- **Maintain operational stealth:** lower acoustic and thermal signatures compared with large generator-dependent datacentres.

SECURITY & COMPLIANCE

Data protection
Hardware root-of-trust via TPM 2.0, encrypted local storage options, and secure replication for mission-critical data

Operational security (OPSEC)
Hardened OS images and Minimal attack surface through integrated architecture, support for air-gapped and DDIL operations in contested environments.

Interoperability
Standards-based networking (10GbE SFP+, 2.5GbE, VLAN segmentation), out-of-band management (Intel vPRO), and open architecture compatible with military gateway appliances and tactical communications systems.

DURABILITY & HUMAN FACTORS

Durability & human factors
Ruggedization: Not MIL-STD certified; designed with built-in vibration suppression and protection against dust and light spray. Padded ballistic nylon travel cover available for safe transport, including airline check-in.

Ergonomics
Dual carry handles; unit can also be wheeled or rolled using integrated pull-out handle, optimized for individual or two-person transport.

PROCUREMENT CONSIDERATIONS & AFFORDABILITY

Lower acquisition cost
Enables fielding more units per budget, improving tactical coverage without compromising capability.

Sustainment savings
Modular components reduce vendor dependency and lower spares cost and training overhead.

Training and doctrine
Simplified setup procedures and field maintenance checklists reduce operator load and training time for forward units.

KEY CONSIDERATION FOR DEFENCE PROCUREMENT OFFICIALS

"A purpose-built, affordable light duty tactical edge data center that delivers local compute, secure data handling, and modular logistics for expeditionary forces."

"Designed to integrate with vehicle power (V2L), tactical communications, and region-specific power distribution (PDU) for North America or other global regions, while avoiding HCI vendor lock-in and excessive sustainment."

CONCLUSION

HiveRadar P-EDC is a pragmatic light duty tactical edge solution built for the operational realities of defence organizations: rugged, repairable, energy efficient and affordable.

By focusing on true portability, open modularity and realistic human factors, it reduces the operational risk and logistic burden associated with large, expensive bespoke tactical data centers -

While delivering the compute and security capabilities required on the modern battlefield.

Deploy. Connect. Compute™

CONTACT US

TO SCHEDULE A DEMO,
proof of concept, or trial deployment tailored to your operational needs.

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