Vector AI

eVTOL sUAS der nächsten Generation

ISR-Plattform für Einsätze an Land und auf See

Technische Spezifikationen

Spannweite	2,8 m
Länge	1,5 m
IP	IP55
Packmaß	80 x 54 x 34,5 cm
Reichweite Datenlink	60+ km
Frequenz Datenlink	2,2 - 2,5 GHz 4,4 - 4,9 GHz
Datenverschlüsselung	AES 256
AI-Prozessierung	2 x NVIDIA Jetson Orin

Flugleistung

MTOW	9,5 kg
Flugzeit pro Einsatz	180+ min
Geschwindigkeit	15 - 20 m/s
Windtoleranz	10 m/s (Boden) 12 m/s (Luft)
Max. Starthöhe (MSL)	3000 m
Max. Betriebshöhe (MSL)	4000 m
Betriebsart	eVTOL

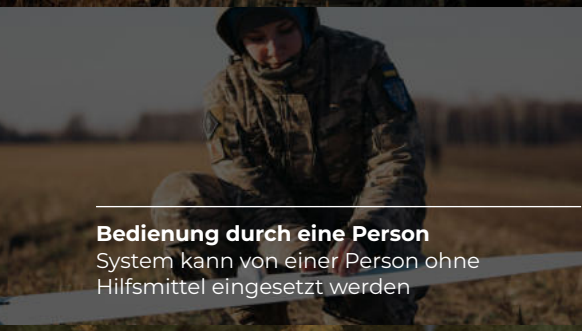
Vector AI ist ein hochmodernes eVTOL sUAS, das **taktische Luftaufklärung** für **kritische Mittelstrecken-ISR-Missionen** in Militär, Verteidigung und öffentlicher Sicherheit bietet. Es ermöglicht luftgestützte Überwachung, Aufklärung, Artillerieoptimierung, Grenzsicherung, Katastrophenmanagement und unterstützt bessere **Entscheidungen und Einsätze.**

Bei Quantum Systems entwickeln wir innovative UAV-Technologie durch die Integration von Hardware, Software und KI, um Intelligenz aus der Luft neu zu definieren. Unser Vector AI sUAS bietet außergewöhnliche Lösungen für Multi-**Domain Operationen (MDO)** und **Software Defined Defense (SDD).**

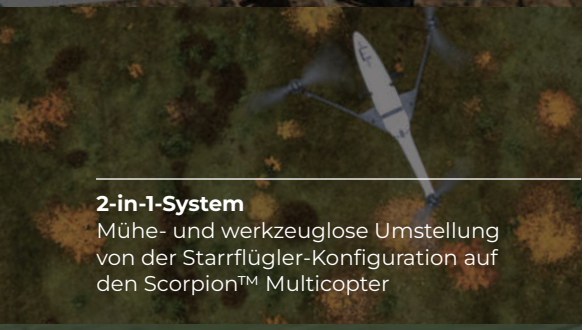
Aufklärungsnutzlasten

- Next Vision Raptor EO/IR 360°
- SIGINT-Nutzlasten
- CRPA-Module
- Tethering
- Akustischer Sensor
- Zusätzliche Datenlinks (z.B. für RVT/ROVER)

Leicht zu transportieren
Kompakter Rucksack für das gesamte taktische Einsatzsystem



Bedienung durch eine Person
System kann von einer Person ohne Hilfsmittel eingesetzt werden



2-in-1-System
Mühe- und werkzeuglose Umstellung von der Starrflügler-Konfiguration auf den Scorpion™ Multicopter

AI-Fähigkeiten an Bord
Objekt-Erkennung, -Klassifizierung, und - Verfolgung (EO/IR)

Gesteigerte Flugleistung
Verbesserte Konstruktion des Antriebs-strangs und aufgerüstete Motoren

Family of Systems (FoS)

Unsere Systemfamilie, bestehend aus vier eVTOL-Drohnen und einer Drone-Port-Lösung, integriert Hardware, Software und künstliche Intelligenz, um innovative Luftaufklärung für Multi-Domain Operationen und Software Defined Defense zu ermöglichen. Unsere skalierbaren und funktionalen Lösungen sind der Schlüssel zu einem effizienten und vernetzten Lagebild in dynamischen Umgebungen.

Fähigkeiten im digitalen Gefechtsfeld

Luftaufklärung

- Hochauflösende EO/IR-Visualisierungen in **Echtzeit**
- **Taktische Erkenntnisse** durch künstliche Intelligenz an Bord

Ortsunabhängiger Einsatz

- Absolute und relative Referenzierung für **unterbrechungsfreien Betrieb ohne GNSS**
- Autonome Navigation und **minimaler Fußabdruck**

Sicheres und zukunftsfähiges System

- **Skalierbares, modulares Design,** anpassbar an sich entwickelnde Bedrohungen
- Integrierte und modulare Schulungs-konzepte für **effiziente Ausbildung**

Datenerfassung

EO/IR-Videosensor Gimbal

- Hochauflösende Bildgebung für **missionskritische Aufklärung**
- Erweiterte Kodierungsformate: H.265, AV1

Navigation und Awareness-Systeme

- Präzisionslandung und Kollisions-vermeidung bei **Tag und Nacht**
- **Nahtlose Zusammenarbeit mit bemanntem Flugverkehr** (ADS-B In & Out)

Erweiterbare Sensorik

- **Zusätzliche Fächer** für SIGINT, CRPA, Tethering und weitere Nutzlasten
- USB-C-Multiconnector - **modulare Nutzlastfähigkeit**, auch für die Integration von Drittanbietern, erhöht die operative Flexibilität

Datenverarbeitung

Taktischer ISR-Vorteil

- Erweiterte **visuelle und akustische Intelligenz** für Überwachung und Aufklärung
- **Entscheidungsfindung in Echtzeit** in dynamischen Umgebungen

Flexible Plattform

- Modulare ROS/Docker-Architektur für **Skalierbarkeit** und **Zukunftssicherheit**
- **Integrierte AI-Prozessierung** mit zwei NVIDIA Jetson Orin NX

Receptor AI Software Suite

- **Sensor Fusion** für verbesserten Flug-betrieb, taktische Erkenntnisse und vorausschauende Wartung
- **AI-Fähigkeiten**
  - Erweiterte Bildverarbeitung (EO/IR)
  - Szenenanalyse zur **unmittelbaren Einschätzung der Bedrohung**

Datenverteilung

Einheitliches Lagebild

- Integrierte Datenströme für **Echtzeit-Situationsbewusstsein**
- Umfassende, umsetzbare Erkenntnisse über alle Bereiche hinweg

Resiliente Kommunikation

- **Dualband-Konnektivität** mit automatischen Frequenzwechseln
- **Interoperable** APIs für BMS wie SitaWare, FacNav und Krypova

Autonome und flexible Operationen

- Schwarmoperationen und verteilte Planung mit **minimalem Benutzereingriff**
- Ermöglicht verteilte Missionsplanung und **MUM-T**

QUANTUM SYSTEMS

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quantum-systems.com

Twister

Short-Range eVTOL sUAS

Compact tactical ISR platform for dynamic small-scale operations

Technical Specifications

Wingspan	1.25 m / 4.1 ft
Length	0.6 m / 1.97 ft
IP Rating	IP54
Data Link Range	15 km
Data Link Freq.	2.2 - 2.5 GHz 4.4 - 4.9 GHz
Data Encryption	AES 256
AI Processing	NVIDIA Jetson Orin

Flight Performance

MTOW	3.8 kg
Flight Endurance	90 min
Speed Range	19 - 21 m/s
Wind Tolerance	10 m/s (ground) 12 m/s (air)
Max. Take-Off Altitude (MSL)	3200 m
Max. Operating Altitude (MSL)	3700 m
Operating Mode	eVTOL

Twister is a compact eVTOL sUAS that delivers visual and acoustic aerial intelligence for **critical short-range ISR missions** in military, defense, and public safety sectors.
It supports surveillance, artillery optimization, border security, reconnaissance, disaster management and law enforcement, **enabling better decision-making and operations.**

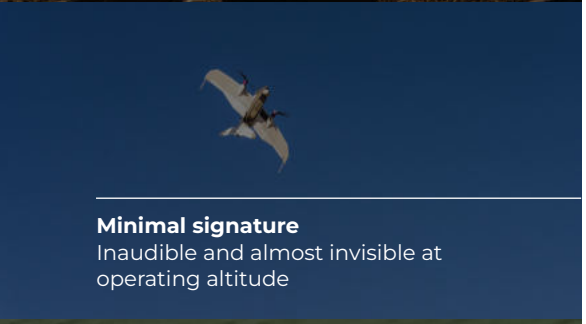
Payloads

- EO/IR gimbal (with laser illuminator option available)
- Acoustic sensor

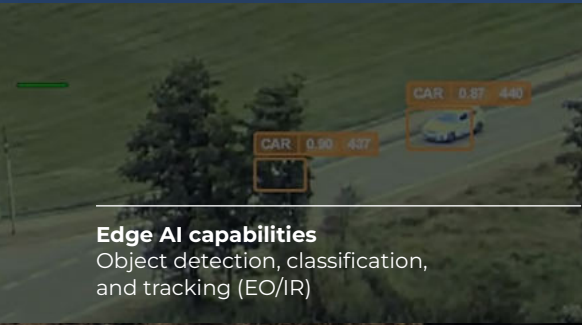
At Quantum Systems, we innovate drone technology by integrating hardware, software, and AI to **redefine aerial intelligence**. Our Twister sUAS delivers exceptional solutions for **Multi-Domain Operations (MDO)** and **Software Defined Defense (SDD).**

Easy to carry
Compact backpack carries the whole tactical deployment system

One person set-up
System can be deployed by one person without any additional tools



Minimal signature
Inaudible and almost invisible at operating altitude



Edge AI capabilities
Object detection, classification, and tracking (EO/IR)

eVTOL tailsitter
Launchable from almost any location

Family of Systems (FoS)

Our family of systems, comprising four eVTOL drones and a drone-port solution, integrates hardware, software, and AI to deliver innovative aerial intelligence for Multi-Domain Operations and Software Defined Defense. Our scalable and functional solutions are the key to efficient and networked situational awareness in dynamic environments.

Digital Battlefield Capabilities

Gather Aerial Intelligence

- High-resolution EO/IR **visuals in real-time**
- **Tactical insights** and mission-critical information powered by onboard AI

Operate Anywhere

- Absolute & relative referencing for **uninterrupted GNSS-denied operations**
- Autonomous navigation and minimal footprint

Secure and Future-Ready System

- Scalable, modular design **adaptable** to evolving threats
- **Blended and modular training** concepts for efficient user enablement

Data Capturing

EO/IR Gimbaled Video Sensor

- High-resolution imaging for **mission-critical intelligence**
- Advanced encoding formats: H.265, AV1

Navigation and Awareness Systems

- Precision landing and obstacle avoidance in **day/night conditions**

Acoustic Data

- Detection of acoustic events such as gunshots, artillery fire, and other explosions
- **Precise localization** of acoustic events

Data Processing

ISR Tactical Edge

- Advanced **visual and acoustic intelligence** for surveillance and reconnaissance
- **Real-time decision-making** in dynamic environments

Platform Flexibility

- Modular ROS/Docker architecture for **scalability** and future-proofing
- Powered by NVIDIA Jetson Orin NX for **onboard AI** processing

Receptor AI Unified Software Suite

- **Sensor Fusion** for improved flight operations, tactical insights and predictive maintenance
- AI Capabilities
  - Advanced image processing (EO/IR)
  - Scene analysis for **immediate threat assessment**

Data Sharing

Unified Operational Picture

- Integrated data streams for **real-time situational awareness**
- Comprehensive, actionable insights across domains

EW-Resilient Communications

- **Dual-band connectivity** with automated frequency changes
- **Interoperable** APIs for battle management systems like SitaWare, FacNav, and Kropyva

Autonomous and Flexible Operations

- Swarm missions and distributed planning with **minimal user intervention**
- Enables **distributed mission planning** and swarm operations (MUM-T)

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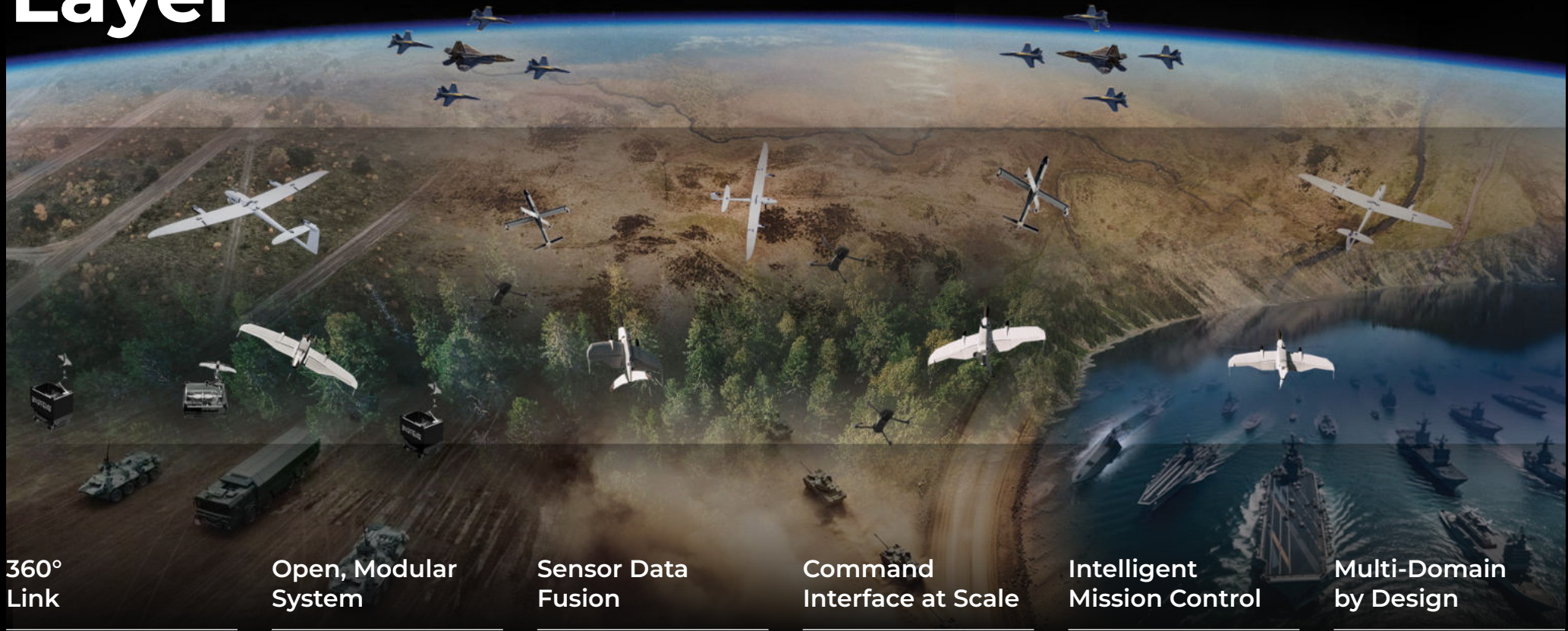
quantum-systems.com

The Unmanned Layer

MOSAIC UXS



360° Link

MOSAIC UXS integrates effortlessly with Battle Management Systems (BMS), Main Ground Combat Systems (MGCS), and Future Combat Air Systems (FCAS) for reliable interoperability.

Open, Modular System

MOSAIC UXS simplifies integration with open interfaces for third-party systems - minimizing complexity and training. One single interface supports all domains and mission sizes.

Sensor Data Fusion

MOSAIC UXS combines data from all sensors and systems into a single feed, reducing operator cognitive load while maintaining full mission awareness across the operational environment.

Command Interface at Scale

MOSAIC UXS powers all levels of control - from smartphone-operated frontline units to full swarm orchestration on multiple screens in command centers, using the same unified software.

Intelligent Mission Control

MOSAIC UXS uses AI to support planning and execution by creating a 3D digital twin and translating objectives into real-time commands for autonomous mission coordination.

Multi-Domain by Design

The MOSAIC UXS platform orchestrates unmanned systems across air, land, and sea - connecting ISR drones, ground vehicles, maritime assets, and integrated sensors for joint operations.

quantum-systems.com

Reliant

Long-Range VTOL UAS

Group 2 ISR/RSTA platform for extended operations

Technical Specifications

Wingspan	4.3 m / 14.1 ft
Length	2.38 m / 7.8 ft
IP Rating	IP55
Packed Size	2 hardcases, fit into G-Wagon/Hilux type vehicle
Data Link Range	160 km
Data Link Freq.	2.2 - 2.5 GHz 4.4 - 4.9 GHz
Data Encryption	AES 256
AI Processing	3 x NVIDIA Jetson Orin

Flight Performance

MTOW	33 kg
Flight Endurance	10+ hours
Speed Range	~ 25 m/s
Wind Tolerance	15 m/s
Max. Take-Off Altitude (MSL)	3000 m
Max. Operating Altitude (MSL)	4500 m
Operating Mode	eVTOL

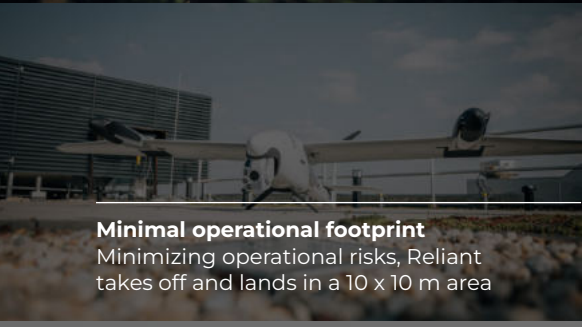
Reliant is a cutting-edge fixed wing VTOL UAS platform **for critical beyond-line-of-sight ISR/RSTA missions** in **GNSS-denied environments**, excelling in ISR with advanced automation and data capture. It enables **better decision-making and operations** for military and defense aerial intelligence applications on **land and sea.**

At Quantum Systems, we innovate drone technology by integrating hardware, software, and AI to **redefine aerial intelligence.** Our Reliant UAS delivers exceptional solutions for **Multi-Domain Operations (MDO)** and **Software Defined Defense (SDD).**

Payloads

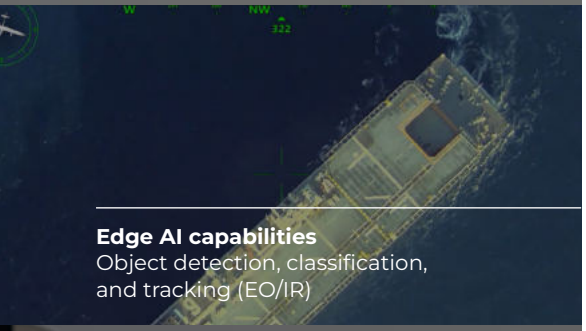
- Gimbaled EO/IR sensor with additional options:
  - Laser rangefinder
  - Laser designator
  - Laser illuminator
- Synthetic aperture radar
- SIGINT payloads
- CRPA modules
- Electronic Warfare (EW)
- Additional data links

Vertical take-off and landing
No launch or recovery equipment needed

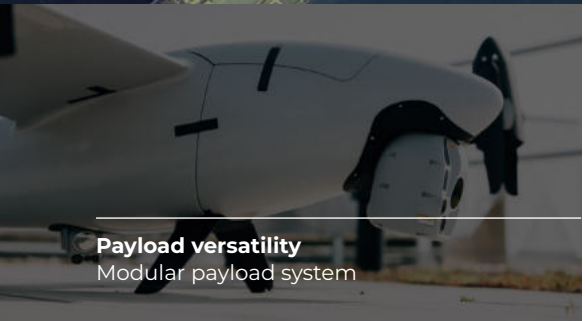


Minimal operational footprint
Minimizing operational risks, Reliant takes off and lands in a 10 x 10 m area

Rugged design
Seamless operations in harsh conditions



Edge AI capabilities
Object detection, classification, and tracking (EO/IR)



Payload versatility
Modular payload system

Family of Systems (FoS)

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- Autonomous navigation and minimal footprint

Secure, Future-Ready System

- Scalable, modular design **adaptable** to evolving threats
- **Blended and modular training** concepts for efficient user enablement

Data Capturing

EO/IR Gimbaled Video Sensor

- High-resolution imaging for **mission-critical intelligence**
- Advanced encoding formats: H.265, AV1

Navigation and Awareness Systems

- Precision landing and obstacle avoidance in **day/night conditions**
- ADS-B In and optional TSO-certified ADS-B Out for **air traffic awareness**
- Optional Mode 5/IFF transponder

Expandable Sensor Suite

- Compliant with **USSOCOM modular payload standard** for SIGINT and Electronic Warfare (EW)
- Modular **third-party payload capability** for operational flexibility

Data Processing

ISR Tactical Edge

- Advanced **aerial intelligence** for surveillance and reconnaissance
- **Real-time decision-making** in dynamic environments

Platform Flexibility

- Modular ROS/Docker architecture for **scalability** and future-proofing
- Powered by 3 x NVIDIA Jetson Orin NX for **onboard AI** processing

Receptor AI Unified Software Suite

- **Sensor Fusion** for improved flight operations, tactical insights and predictive maintenance
- AI Capabilities
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  - Scene analysis for **immediate threat assessment**

Data Sharing

Unified Operational Picture

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- Comprehensive, actionable insights across domains

EW-Resilient Communications

- Dual-band connectivity with automated frequency changes and **AI-driven anti-jamming algorithms**
- **Interoperable** APIs for battle management systems like SitaWare, FacNav, and Kropyva

Autonomous and Flexible Operations

- Swarm missions and distributed planning with **minimal user intervention**
- Enables **distributed mission planning** and swarm operations (MUM-T)

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quantum-systems.com

Matrix

Long-Range Tracking Antenna

Easy-to-assemble ground side antenna for extended flight ranges

Matrix is a ground side antenna to enhance the capabilities of the Quantum Systems Family of Systems. It features two high gain directional antennas mounted on a pan-tilt unit that follow the vehicle in its flight in order to ensure a long-range link. It increases the data link range up to more than 60 km, which gives the operator much more operational flexibility. The easily transportable three-piece kit comes in a single case and is easily assembled by one operator in less than three minutes. Matrix can be powered by a Vector™ battery or any other 24V DC power source using an adapter to simplify power management in the field.

Technical Specifications

Data Link Range
+60 km

Data Link Frequency
Dual Band, S & C-Band

Packing Size
81 x 54 x 30.5 cm

IP Rating
IP55

System Weight
10 kg
26.1 kg (incl. box)

Tripod Stand Height
Max. 2 m

Set-up Time
>3 min
No tools needed

Power Source
Vector™ Battery
24 V DC plug

Scan Range
Azimuth: 360° continuous
Elevation: -45° to + 95°

Additional Features

Software
Matrix can be configured in QBase, the ground control software for the Family of Systems

Tracking
Position- or RSSI-tracking (for GNSS-denied environments)

Calibration
Includes a camera for quick and easy calibration

Antennas
2x high gain patch antennas

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quantum-systems.com

Automation Meets Mobility

Nexus Drone Port

The Nexus Drone Port by Quantum Systems is an advanced **drone-in-a-box solution** that automates every step of UAV missions — from take-off to landing and everything in between — redefining **autonomous aerial operations.** Designed for maximum autonomy and flexibility, the Drone Port:

- Houses up to three Twister eVTOLs
- Handles charging and mission preparation autonomously
- Enables 24/7 deployment **without human intervention**

Modular, Mobile, and Mission-Ready

Nexus is adaptable to **static or mobile deployment** and integrates seamlessly with

- Unmanned platforms, such as the ARX Gereon UGV, for fully autonomous patrol and reconnaissance missions
- Manned vehicles, such as the ACS ENOK AB, for rapid, battlefield-ready deployment
- Naval vessels, enabling persistent maritime ISR capabilities
- Fixed ground installations for strategic site monitoring

Whether mounted on land, sea, or stationary platforms, the Nexus Drone Port delivers unmatched **mission flexibility, scalability, and situational awareness**.

Key Capabilities

- Fully autonomous operations
- Task-based deployment
- Operations in hard-to-reach or denied environments

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