



**The world's most powerful mesh-connected edge AI device**

The **VIZEDGE AIR** combines our cutting-edge FORTIFAI Artificial Intelligence (AI) engine with industry-leading high-performance edge computing and IP mesh network connectivity in a compact form factor. This low-SWAP device provides a versatile turn-key solution to augment a fleet of collaborative unmanned aerial, surface or ground vehicles with the latest AI-powered enhancements.

**Detection and Tracking** – Our proprietary state-of-the-art video tracker uses Deep Neural Networks to find things of interest and maintain an accurate 'lock' for as long as required. This versatile capability can be used in many ways, such as target pursuit (people, boats, vehicles, drones), search and rescue, survey image repeatability, and even protecting privacy with real-time face redaction.

**Modular Integration** – With no one-size-fits-all solution, the VIZEDGE AIR can be integrated within your platform as an OEM board, an active cooled IP42 enclosure or passively cooled IP67 enclosure. Customise your device with only the use-case-relevant peripherals from our WiFi, 3G/4G cellular, 3G-SDI video, stereo camera and ADS-B module range.

**Precision Landing** – VIZEDGE AIR uses computer vision to achieve smoother and safer landings, especially in GPS-denied or windy environments. More battery power is reserved for operations by conducting quicker landings, and less time will be lost to mid-mission payload deliveries or battery swaps.

**DETECTION TIME**

**60 ms**

**AI PERFORMANCE**

**21 TOPS**

**LOCAL STORAGE**

**2 TB**

**POWER CONSUMPTION**

**25 watts**



## HARDWARE SPECS

<b>AI Performance</b>	21 TOPS – Embedded AI system-on-module computer
<b>Storage</b>	128 GB to 2 TB NVMe SSD
<b>Video Input</b>	2x 50-pin FFC connectors exposing 3 x 4-lane MIPI CSI-2 Optional: 1 x BNC for 3G SDI up to 2048 x 1080 @ 60fps
<b>Communications</b>	1 x IP67 breakout cable for 1GbE, USB 2.0 and DC in Optional: WiFi 2.4/5.8 GHz via 1 to 2 RP-SMA ADS-B 1090 MHz receiver via SMA Encrypted MANET Mesh datalink via SMA
<b>DC Voltage In</b>	9 VDC-36 VDC
<b>Ingress Protection</b>	IP 42 (Active cooled) or IP 67 (Passive cooled)
<b>Working Temperature</b>	-20 to +55C ambient temperature at 95% RH non-condensing
<b>MTBF</b>	30,000 hours minimum
<b>Weight</b>	<400g
<b>Compliance</b>	ROHS, CE
<b>Drone Compatibility</b>	Parrot Anafi (via RC), MavLink drones, DJI Mavic 2 Enterprise (via RC) and Matrice 300 coming soon

## CORE FUNCTIONS

<b>Target Classification</b>	Person, car, drone, bird, plane, face, helicopter, boat. Custom classes available on request
<b>Single Object Tracking</b>	No training required Deep Neural Network (DNN) tracking, tracked object IDs and predictive tracking past obstacles
<b>Distance Estimation</b>	Range prediction for drones and people
<b>Target Course</b>	Visual indication of target heading and history trail
<b>Dynamic E-Zoom</b>	Digitally magnify a single subject for improved recognition
<b>Horizon Tracking</b>	Detect and track the horizon for video orientation correction and visual odometry
<b>Precision Landing</b>	ArUco landing marker detection, tracking and prioritisation

## USE CASES



Security and Patrol



Search and Rescue



Situational Awareness



Survey and Inspection



Delivery

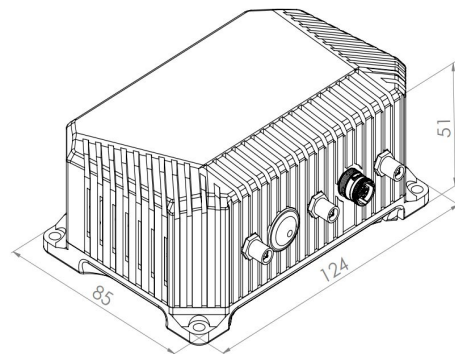


Counter-UAV

## KEY FEATURES

- ✔ **Geotagging of visual sightings**
- ✔ **Faster search and rescue with object detection**
- ✔ **Automated target interception and pursuit**
- ✔ **Store large amounts of data with 2TB storage**
- ✔ **Integrated ADS-B receiver to avoid local air traffic**
- ✔ **Save battery, time and money with faster landing**

## DIMENSIONS



Designed and supported in the UK 

VIZGARD is an award-winning Artificial Intelligence company on a mission to build a safer future with cutting-edge computer vision solutions that enhance and automate unmanned and counter-unmanned systems.

