RAVEN

G7X DEFENCE TECHNOLOGY SOLUTIONS
KINGDOM OF BAHRAIN



An integrated counter-drone system that detects, identifies, tracks and responds to drone threats through one command-and-control system.

PRODUCT FAMILY PROFILE

EDITION 01 · 2026

RAVEN

COUNTER-UAS PRODUCT FAMILY

Integrated protection against unmanned aerial threats.

RAVEN is an integrated counter-drone system. It detects the drone, identifies it, tracks it, and gives the operator the right option to respond.

Radar provides detection and tracking. Electro-optics provides visual identification. Cyber-over-RF can identify and take control of supported drones. Satellite communications connect deployed systems, while RAVEN C2 brings everything together into one operating picture.

KEY FEATURES AND BENEFITS

- ✓ **Five layers, one system** — detect, track, identify, control and connect
- ✓ **4D radar** with a 30 km instrumented range, tracking Group 1–3 drones at ranges up to 12 km and handling over 1,000 objects of interest
- ✓ **Electro-optics** provides day and night detection, recognition and visual identification with automatic radar cueing
- ✓ **Cyber-over-RF** identifies supported drones and can take control and safely land them when authorised
- ✓ **Satellite communications** provide beyond-line-of-sight connectivity between deployed systems and command centres
- ✓ **RAVEN C2** brings all connected sensors and response options into one operating picture

APPLICATIONS

Critical infrastructure protection

Air bases and military installations

Border and perimeter surveillance

Ports, terminals and coastal assets

Event and venue defence

Mobile and rapid response

SPECIFICATIONS VARY BETWEEN CONFIGURATIONS AND ARE CONFIRMED PER PROGRAMME



FIVE LAYERS. ONE SYSTEM.

FROM DETECTION TO RESPONSE THROUGH ONE INTEGRATED ARCHITECTURE

RAVEN connects detection, identification, control, communications and command through one integrated system.

FUNCTION

Counter-UAS
Detect · Track · Identify · Control · Connect

CONFIGURATION

Fixed Site · Compact

COVERAGE

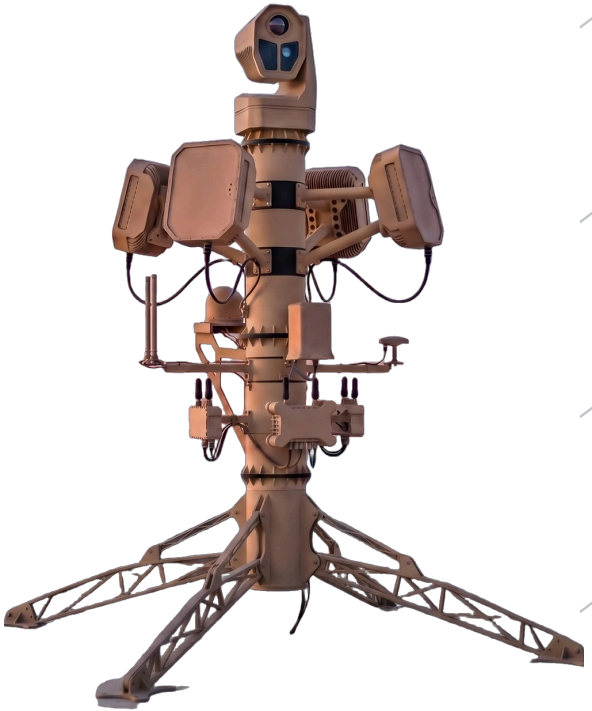
Configuration dependent
30 km instrumented radar range

ENVIRONMENT

Radar −40 to +65 °C
Electro-optics −32 to +55 °C · IP67

COMMAND

RAVEN C2 · REST API and WebSocket



01 RADAR · DETECT · TRACK — 30 km
INSTRUMENTED RANGE

Four radar faces detect and track drones automatically and send their position, altitude, direction and speed to RAVEN C2.

G1 3–5.3 KM · G2 5.3–7.2 KM · G3 7.2–12 KM · 1,000+ OBJECTS OF INTEREST

02 ELECTRO-OPTICS · IDENTIFY · VERIFY — D 9.87 · R 3.65 · I 1.87 km

Provides day and night visual detection and identification of the target and automatically points toward the radar track.

COOLED THERMAL · DAY/NIGHT CAMERA · LASER RANGEFINDER

Performance varies with target size, atmospheric visibility and thermal contrast.

03 CYBER-OVER-RF · IDENTIFY · TAKE CONTROL — Up to 10 km*

Identifies supported drones and their operators. When authorised, it can take control of the drone and safely land it.

DRONE + OPERATOR LOCATION · VENDOR, MODEL, SERIAL NUMBER · 3–5 SEC MITIGATION

*Coverage depends on supported protocol, RF environment, antenna configuration, terrain and line of sight.

04 SATCOM · CONNECT — BLOS · multi-orbit

Provides beyond-line-of-sight connectivity between deployed RAVEN systems and remote command centres.

05 RAVEN C2 · FUSE · DECIDE · COMMAND — Real-time sensor fusion

Brings all connected sensors and response options into one operating picture and one operator interface.

RADAR

DETECT AND TRACK THE DRONE

ECHODYNE 4D MESA RADAR

The radar automatically detects and tracks aerial targets, providing their position, altitude, direction and speed to RAVEN C2.

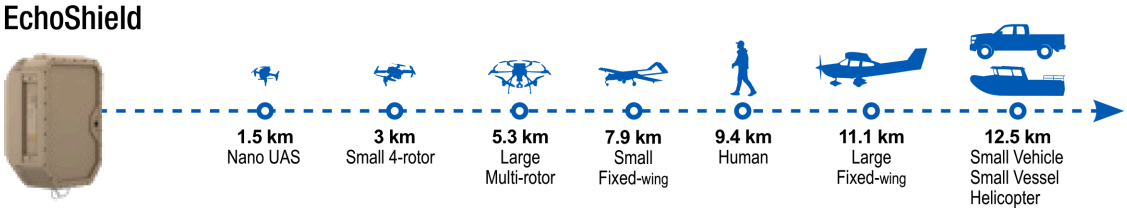
It provides a 30 km instrumented range, while actual drone tracking range depends on the size and radar signature of the target.

-40 TO +65 °C · IP67 · MIL-STD-810H
10 GBE DATA · 1 GBE TRACKS · 21.5–33 VDC

MISSION SETS · SWITCHED IN SOFTWARE

- COUNTER-UAS
- COUNTER-UAS 2
- GROUND SURVEILLANCE
- COASTAL SURVEILLANCE
- AIRSPACE MANAGEMENT
- ON-THE-MOVE

MEAN TRACKING RANGE BY TARGET



RADAR SPECIFICATIONS

Size **42.5 × 33 × 18** cm 16.7 × 13 × 7 IN	Weight **17.8** kg 39.2 LB	Power **< 250** W +21.5 TO +33 VDC	Frequency **15.4 – 16.6** GHz KU-BAND
Field of view **130 × 90** ° AZ × EL	Track accuracy **< 0.5** ° AZ AND EL	Update rate **10** Hz TRACK OUTPUT	Max tracks **> 1,000** OBJECTS OF INTEREST

ECHODYNE PUBLISHED MEAN TRACKING RANGES · INSTRUMENTED RANGE 30 KM, MISSION DEFINED · GROUP 1 -20 TO -10 DBSM · GROUP 2 -10 TO -3 DBSM · GROUP 3 -3 TO 5 DBSM

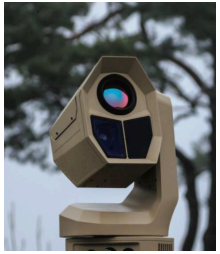
ELECTRO-OPTICS

IDENTIFY AND VERIFY THE TARGET

Electro-optics provides day and night visual detection and identification of the target.

RAVEN C2 automatically points the camera toward the radar track, allowing the operator to quickly verify and monitor the target.

THERMAL DETECTOR	Cooled MWIR 640 × 512, 3 – 5 µm · NETD ≤ 21 mK
THERMAL FOV	13.7° – 0.7° · f 40 – 825 mm · optical 20×
DAY/NIGHT CAMERA	1920 × 1080 · f 15 – 1250 mm · optical 83×
SENSITIVITY	Colour 0.05 lx · monochrome 0.005 lx
LASER RANGEFINDER	50 m to 32,000 m · eye-safe Class 1/1M
PAN AND TILT	n × 360° az · ±90° el · 0.001 – 90 °/s
POINTING ACCURACY	0.005°, no backlash
ENVIRONMENTAL	−32 to +55 °C · IP67 · MIL-STD-810





DETECTION
9.87 km

RECOGNITION
3.65 km

IDENTIFICATION
1.87 km

Performance varies with target size, atmospheric visibility and thermal contrast.

DEGRADED-VISIBILITY PERFORMANCE

- ✓ **Fog and haze** — a dedicated fog filter, rather than gain that just brightens the murk
- ✓ **Heat turbulence** — a turbulence filter for the shimmer that destroys long-range identification over hot ground
- ✓ **Cooled detector** — mid-wave 3–5 µm holds contrast at range where an uncooled sensor has already lost the target
- ✓ **Slew-to-cue** — driven from the radar track, so the camera is already looking before anyone is asked to decide
- ✓ **Geo-location** — the rangefinder converts a bearing into a grid reference the rest of the estate can act on

> The detection, recognition and identification ranges shown are the manufacturer's figures against a DJI Phantom class target to STANAG 4347, at 50 % probability and ΔT 2 K. Performance varies with target size, atmospheric visibility and thermal contrast.

CONFIGURATION-SPECIFIC · ALTERNATIVE SENSOR HEADS ARE OFFERED WHERE THE LICENSING POSITION OR THE BUDGET REQUIRES IT

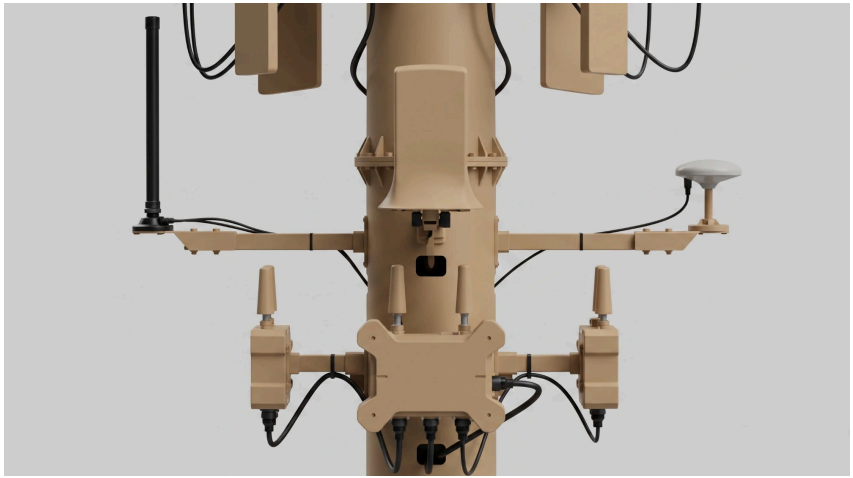
CYBER-OVER-RF

IDENTIFY AND TAKE CONTROL

Cyber-over-RF identifies supported drones through their communication protocols, providing the location of both the drone and its operator.

When authorised, the system can take control of an unauthorised drone and safely land it in a designated area — without conventional jamming or GPS spoofing.

DETECT → TRACK → IDENTIFY → TAKE CONTROL



COVERAGE

Up to 10 km*

*Coverage depends on supported protocol, RF environment, antenna configuration, terrain and line of sight.

DRONE + OPERATOR
LOCATION

VENDOR · MODEL
SERIAL NUMBER

3 – 5 SEC
MITIGATION

FRIEND OR FOE
IDENTIFICATION

HOW IT DIFFERS

- ✓ **Protocol-level identification** — the aircraft is recognised by what it transmits, not by a signature guess
- ✓ **Controlled landing** — the aircraft is brought down intact in a zone you define, so it can be examined afterwards
- ✓ **No wide-band jamming** — it does not rely on jamming or GNSS spoofing, so authorised aircraft, communications and navigation are not targeted
- ✓ **Operator authorised** — take-control is released by a person, under the site's rules of engagement

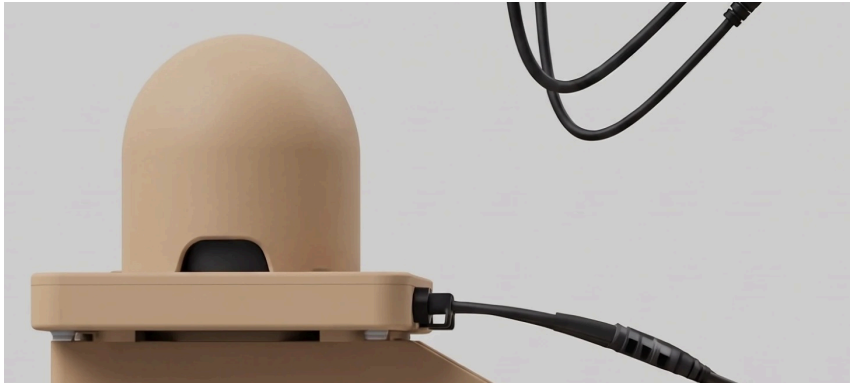
NO JAMMING · NO GPS SPOOFING · REST API / WEBSOCKET INTEGRATION

CONNECT RAVEN BEYOND LINE OF SIGHT

SATELLITE COMMUNICATIONS INTEGRATED INTO THE MAST

Satellite communications provide beyond-line-of-sight connectivity between deployed RAVEN systems and remote command centres.

The integrated terminal supports multiple satellite orbits and can acquire and track the satellite without relying on GNSS.



RESILIENCE BY DESIGN

- ✓ **Multi-orbit** — GEO, MEO, HEO and LEO
- ✓ **Multi-network** — switches between military, commercial and hybrid
- ✓ **Multi-polarisation** — RHCP/LHCP to work around jamming and interference
- ✓ **GNSS-independent** satellite acquisition and tracking

TERMINAL

BAND	Ka — military and commercial
APERTURE	30 cm class
AMPLIFIER	20 W block up-converter
INTEGRATED	Power supply · antenna control unit · inertial navigation
ORBITS	GEO · MEO · HEO · LEO
THROUGHPUT	— per terminal datasheet
ENCRYPTION	AES-256, with the high-throughput modem option
DEPLOYMENT	Roll-on / roll-off, plug and play
G/T AND EIRP	— stated per link budget

ACTUAL RATES DEPEND ON THE SATELLITE, BEAM AND SERVICE PLAN CONTRACTED

RAVEN C2

ONE OPERATING PICTURE · ONE OPERATOR INTERFACE

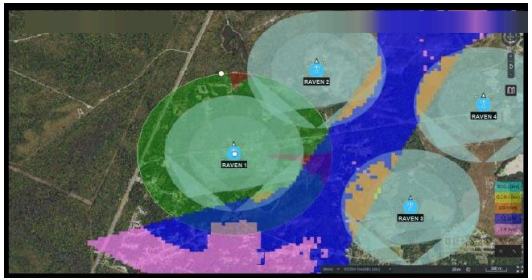
RAVEN C2 brings all connected sensors and response options into one operating picture.

The operator can see the threat, verify it, select the authorised response and control the system from one interface.

Multiple RAVEN systems can be connected to the same command-and-control environment for centralised monitoring and control.

OPERATING PICTURE	Single integrated view
SENSOR FUSION	Real-time
MULTI-SITE	Centralised monitoring and control
RESPONSE	Operator authorised
RECORDING	Mission recording and replay
INTEGRATION	REST API and WebSocket

OPTIMISATION



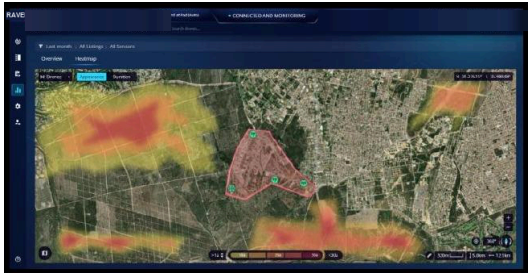
DEBRIEF



ANALYTICS



HEATMAP



EACH SENSOR OR SYSTEM INTERFACE IS TECHNICALLY ASSESSED, SCOPED AND PRICED INDIVIDUALLY

CONFIGURATIONS



01

RAVEN FIXED SITE

PERMANENT SITE PROTECTION

- 360° coverage
- Up to 12 km Group 3 tracking
- 1,000+ objects of interest



02

RAVEN COMPACT

COMPACT COUNTER-UAS NODE

- 130° × 90° radar coverage
- Up to 12 km Group 3 tracking
- Day / night electro-optics

RAVEN

01
FIXED SITE

02
COMPACT

03
C2

04
GEOINT

05
SHIELD

CONTACT

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LOCATION

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PRODUCT FAMILY PROFILE

EDITION 01 · 2026