AARTOS™

AARONIA

DRONE DETECTION X2

DRONE PROTOCOL DECODING AND TRACKING UP TO 40 KM

DETECT LOCALIZE COUNTER

DETECT

5 km detection range, upgradable to 40 km via long range antennas

- 5 km detection range, upgradable to an astounding 40 km
- Real-time decoding of DJI OcuSync, MavLink and DJI WiFi
- Real-time 2.4 GHz and 5.8 GHz frequency coverage
- Ready to use in less than 30 seconds
- Powerful software
- Made in Germany

LOCALIZE

Shows exact locations of drone, operator and homepoint

- Shows further information like type of drone, serial number, height, speed, etc.
- Supports writing and reading custom mission data sets
- Portable and 24/7 stationary variants
- Remote control capabilites

COUNTER

Optional jamming systems with up to 10 km jamming range

- Full integration into the AARTOS™ Drone Detection System
- Seamless frequency range, selectively from 400 MHz to 6 GHz
- IP65 weather protection, operating temperature -20°C to +60°C
- Portable or stationary

X2 MIL

- MIL grade protection
- Powerful and reliable
- Hot-swap batteries

X2 Stationary

- 24/7 remote outdoor use
- Extendable with radar, jammer and cameras

X2 Portable

- Cost effective
- Highly portable
- Optional powerbank

Secure the airspace from threats

Protect your critical infrastructure from unauthorized drone access with our advanced defense system. The technology detects and neutralizes drones near your assets without disrupting normal operations. With our system, you are well prepared against potential drone attacks and can focus on the safe operation of your assets.

Powerful mobile drone detection

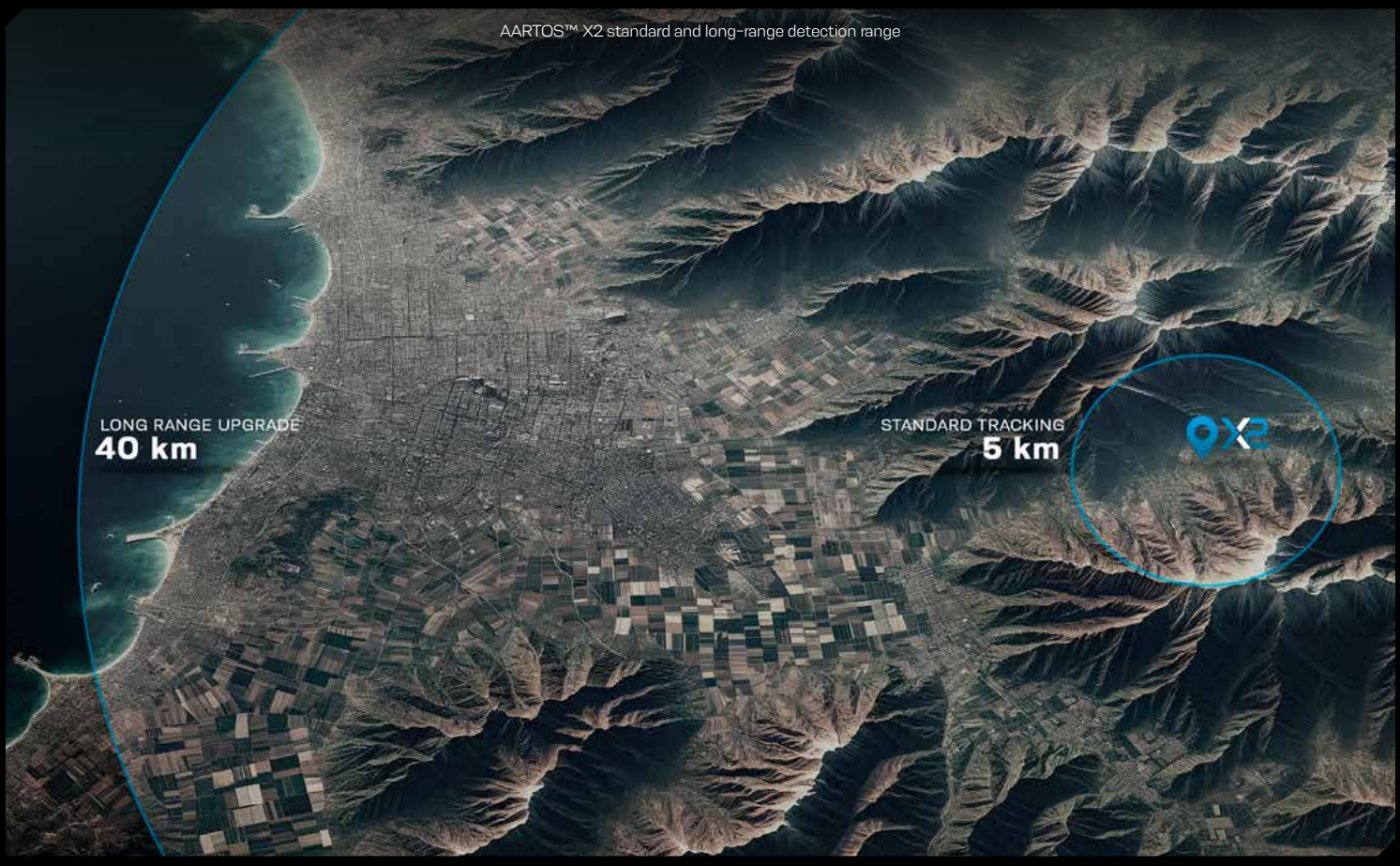
Introducing our portable counter drone system – especially designed for law enforcement, organizations and companies working in the field of critical infrastructure.

This system is designed to provide on-demand drone detection and optional neutralization capabilities for various scenarios such as crowd control, special operations, and perimeter security. The system is portable, easy to use and quick to deploy to any location, making it ideal for a variety of operations. It's built to withstand harsh environments and is weather resistant.

Long Range Upgrade

While all AARTOS™ **X2** standard versions come with two antennas capable of a detection range up to 5 km we also offer portable and stationary long range antennas, which extend the detection range dramatically up to 40 km (FCC) in adequate line-of-sight conditions. With the use of high-gain directional antennas mounted either on a portable and extendable tripod or on a fixed mast the operator is able to reliably detect drone swarms and their operators at exceptionally high distances.

Stationary AARTOS™ X2 with long range extension



AARTOS™ X2 standard and long-range detection range

• Safe detection – no false alarms

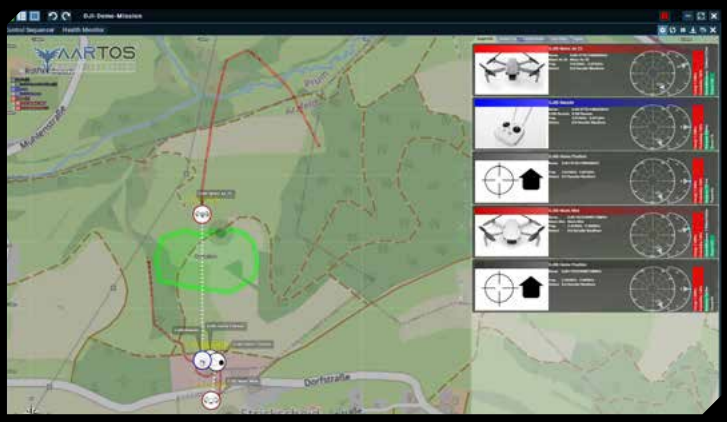
Furthermore, it does not produce false alarms as the data transmitted between the drone and the operator is digitally "decoded": mix-ups are impossible.

• Early detection

The AARTOS™ Drone Detection System triggers an alarm as soon as a remote control sends its first signal, even before the actual drone is airborne. Allowing countermeasures to be launched at an early stage.

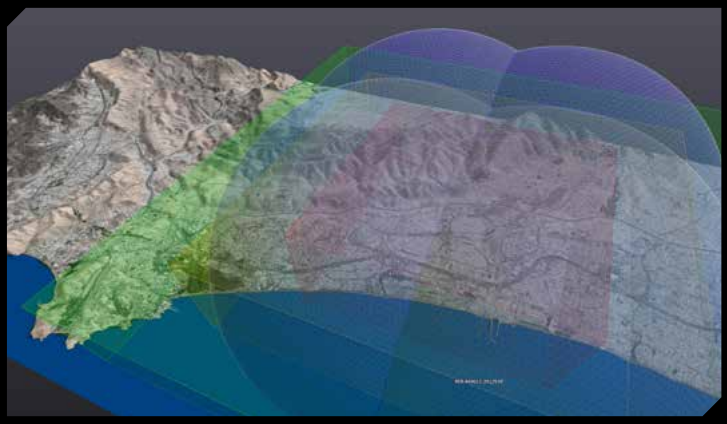
• Tracking the drone operator

Since the AARTOS™ DDS detects both the drone (from downlink signals) and its corresponding remote control, the movement of both can be tracked in real-time.



A top-down 2D perspective is the most commonly used visualization technique in drone detection. The program is easy to understand and navigate due to its similarity to common satellite-image-based map solutions.

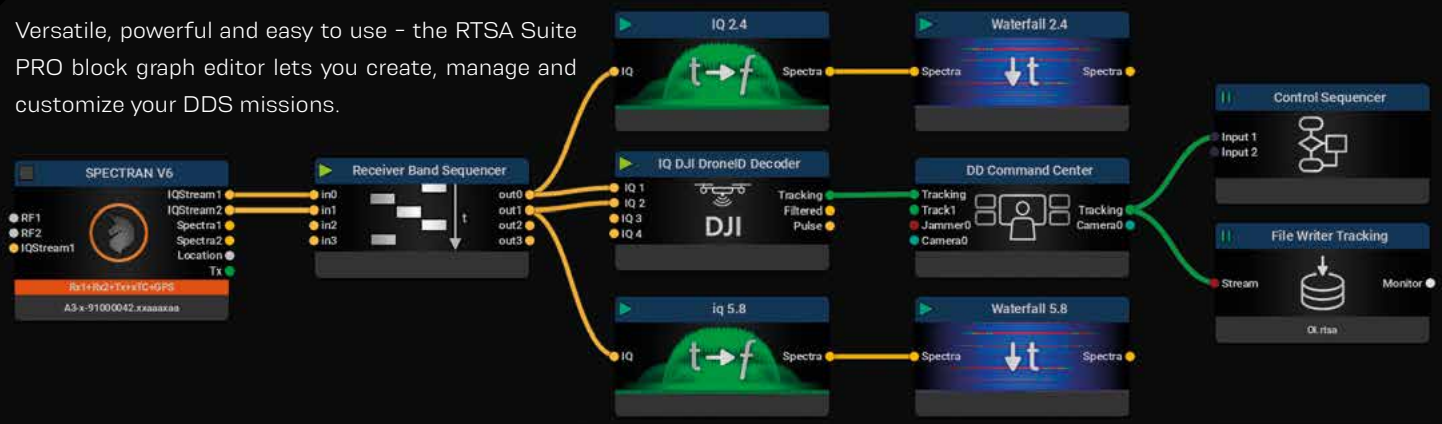
The 3D view expands our capabilities by adding the drone's altitude information (this requires multiple drone detection systems), and making it easier to evaluate distances between different objects on the map.



The topographic mode displays the surrounding terrain's surface, depicting hills, mountains, peaks and valleys.

Combined with our 3D, man-made structures system building system, the topographic view creates the most accurate representation of the surrounding area: AARTOS™ is also able to integrate 3D models of complex areas (e.g. cities, airports, etc.) into its 3D view, improving usability for end users.

Versatile, powerful and easy to use - the RTSA Suite PRO block graph editor lets you create, manage and customize your DDS missions.



MADE IN GERMANY

While all X2 standard versions come with two omnidirectional antennas capable of a detection range up to 5 km we also offer portable and stationary long range antennas, which extend the detection range dramatically to up to 40 km (FCC) in adequate line-of-sight conditions.
With the use of high-gain directional antennas mounted either on a portable and extendable tripod or on a mast or tower the operator is able to reliably detect drones and drone swarms and their operator(s) at exceptionally high distances.
AARTOS™ Radar can determine and display the exact position, flight direction, altitude and of an inbound drone in real-time.
By extending the AARTOS™ X2 to include our stationary jammers with a jamming range of up to 10 km, it creates a system that can reliably and quickly locate and neutralize threats.
Our AARTOS™ Cam is a fully integrated, optical, and thermal solution for the optical verification of drones. It enables the user to visually spot detected drones, even from large distances, and identify potentially dangerous payloads.

AARTOS™ X2 Specifications

Typical range	Standard: max. 5 km Long range: max. 40 km
Usage	Mobile & stationary
Frequency coverage	2.4 GHz + 5.8 GHz
Detection type	Drone protocol decoding
Decoding	DJI OcuSync 1-4, DJI WiFI, Mavlink protocols
Tracking type	GPS
Tracking accuracy	Typically 2 – 3 meters
Scalable	Yes (stationary X2)
Optional radar and camera	Yes (stationary X2)
Optional jamming systems	Yes (stationary X2)

Antenna Specifications

Antenna variant	**Standard Omni Antennas**		**Long Range Antennas**	
Frequency	2.4 - 2.5 GHz	5.1 - 5.9 GHz	2.4 - 2.5 GHz	5.1 - 5.9 GHz
Quantity included	1	1	3	3
Gain	6 ± 0.5 dBi	8 ± 0.5 dBi	20 dBi	14 dBi
VSWR (Max.)	1.5:1	1.5:1	<1.3:1 avg.	<1.5:1 avg
Horizontal Beam Width	360°	360°	120°	120°
Polarisation	Linear, vertical	Linear, vertical	Vertical	Vertical
Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm
Radiation pattern	Omnidirectional	Omnidirectional	Directional	Directional
Connector	N(f)	N(f)	N(f)	N(f)
Temperature range	-40 to +80° C	-40 to +80° C	-20°C - +60°C	-20°C - +60°C
Humidity	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing
IP rating	IP65	IP65	IP65	IP65
Dimensions	ø 25x660 mm	ø 25x660 mm	990x230x65 mm	455x115x60 mm
Weight approx.	0.5 kg		30 kg (6 antennas with amps & tripod mount)	

Analyzer Specifications

Analyzer units	1
Frequency range	10 MHz to 6 GHz
Real-time bandwidth	120 MHz
POI	97 ns (FFT-based), 10 ns (direct I/Q-based)
DANL (internal preamp on)	Typ. -172dBm/Hz
RF connectors	2x Rx N
Frequency reference accuracy	0,5 ppm (5 ppb via OCXO option)
RBW (resolution bw)	62 mHz to 57 MHz
Attenuator range	50 dB / 70 dB (0,5 dB steps)
ADC	2 x 2GSPS 16 Bit
DAC	1 x 2GSPS 14-Bit

AARTOS™ X2 PC Specifications

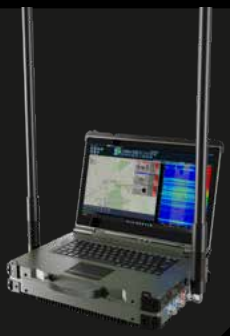
Device type	**X2 Portable**	**X2 Portable MIL-Grade**	**X2 Stationary**
CPU	Intel i7-1360P	Intel® Xeon® E-2176M	Intel i7-1360P
RAM	64 GB	64 GB	64 GB
Data storage	1 TB	4 TB	1 TB
Display	18,5" Full HD, 2000nits	15,6" Full HD	15,6" (on seperate PC)
Graphics card	Intel® Iris® Xe Graphics	Dedicated NVIDIA® GTX 1050 with 4 GB	Intel® Iris® Xe Graphics
Connectors	1x RJ-45 (2.5-Gbit), 3x USB-A 3.2 (5 Gbit/s)	1x RJ-45 (GLAN), 2x USB 3.1 Gen. 2, Audio-In / Out, VGA, DP, 2x Serial DB9	RJ-45 (2.5-Gbit)
Battery runtime	Up to 120 min., up to 10h with optional battery pack	Up to 90 min., up to 15h with optional battery pack	No internal battery
Weight	Approx. 15 kg	9,5 kg	Approx. 25 kg
Dimensions (L x W x H)	52 x 17 x 42 cm	39 x 30 x 9 cm	54 x 37 x 21cm
Temperature (operation)	-10°C to +45°C	-10°C to +50°C (optional -20 °C to +60 °C)	-20°C to +60°C
Temperature (storage)	-20° to +60°C	-20 to +60°C	-30°C to +70°C
Relative humidity	95% relative humidity, non-condensing	95% relative humidity, non-condensing	95% relative humidity, non-condensing
Power input	AC input: 100-240V, 50-60Hz	AC input: 100-240V, 50-60Hz	AC input: 100-240V, 50-60Hz
Power consumption	Typ. <150W	Typ. <100W	Typ. <70W
MIL & IP Standard	IP54	MIL-STD810G, MIL-STD-461F, IP65	IP67

AARTOS™ X2 Versions

AARTOS™ X2
Portable

Art. no. 801/009

AARTOS™ X2
MIL-STD



Art. no. 801/014

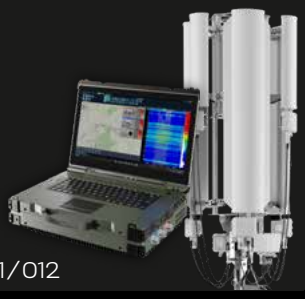
AARTOS™ X2
Stationary

Art. no. 801/010

AARTOS™ X2 Long Range
Portable

Art. no. 801/011

AARTOS™ X2 Long Range
MIL-STD



Art. no. 801/012

AARTOS™ X2 Long Range
Stationary

Art. no. 801/013

AARTOS™ X2 Upgrades and Accessories

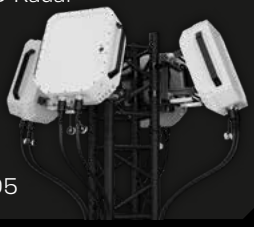
Medium-Range Camera

Art. no. 803/001

Ultra Long-Range Camera
with thermal optics

Art. no. 803/003

AARTOS UAV 4D Radar
Bundle with
four panels



Art. no. 804/005

Handheld Drone Jammer
battery powered

Art. no. 802/001

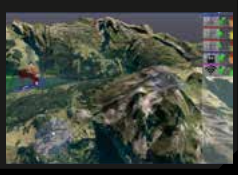
AARTOS X2 Powerbank

Art. no. 805/031

AARTOS DDS App
incl. Tablet PC

Art. no. 805/002

3D Topographic View
for RTSA Suite PRO



Art. no. 806/003

Training Course
for AARTOS X2,
Jammer, Radar
& Camera

Art. no. 807/002

Local Training Course
for AARTOS X2,
Jammer, Radar
& Camera

Art. no. 807/005

FJ SERIES

Fixed Bands Sector Jammers

By extending the AARTOS™ DDS to include our "FJ series" stationary jammer with a jamming range of up to 8 km, it creates a system that can reliably and quickly locate and neutralize threats.

With its directional and omnidirectional antennas and a maximum output power of 1300W the jammer is capable of countering drones within the most common frequency bands (430 MHz, 1.6 GHz, 2.4 GHz and 5.8 GHz).

As with all of our jammers, the interference created is extremely selective, in order to make sure other RF channels are not impaired. In addition, the jammer is directional, and will only jam signals in the direction of the incoming UAV.

SJ SERIES

Programmable Smart Sector Jammer

Our AARTOS™ DDS "SJ series" programmable jammer delivers a gapless coverage from 400 MHz to 6 GHz with an effective jamming range of 10 km.

With its directional antennas it is able to cover all commercial and military drones up to 6 GHz and can counter them with a freely adjustable output power of 30W per sector (upgradable to 100W).

The AARTOS™ CMS (Countermeasure Solutions) can only be sold to entities with proper government approval for the deployment of jammers.
For more information, contact us at mail@aaronia.de.

	SJ240 SJ800	FJ360	MJ170	MJ40
	Seemless frequency jamming from 400 MHz to 6 GHz with a 360° coverage and the highest range in our lineup.	The stationary FJ series cover 360° with a range of up to 3 km and up to 15 frequency bands.	The mobile 6-band jammer is based on the MJ-40 with extended range and output power including a remote control and customizable bands.	This handheld UAV jammer is a potent and portable drone jamming system with 2h battery life and customizable frequency bands.
Typ. Range	4 km / 10 km	3 km	3-4 km	2 km
Antenna(s)	8 directional	2/4 directional	1 directional	1 directional
Sectors	8	2/4	1	1
Bands	All bands up to 6 GHz	Up to 15	6	4
Output Power	240W / 800W	180W / 360W	170W	40W

XCAM SERIES

Optical & thermal PTZ Cameras

Among the latest additions is the Visual Detection System, a fully integrated optical and thermal drone detection solution that is perfectly matched to the detection mechanisms of the AARTOS™ DDS.

This option enables the user to spot detected drones, even from afar, and identify potentially dangerous payloads attached to the drone, such as explosives.

Automated AI tracking will continue even if a drone enters autonomous flying mode while it is being tracked by the Visual Detection System.

- Thermal and optical camera for 24/7 protection
- Sophisticated tracking and analysis AI
- Max. camera resolution of 1920×1080 px (full HD)
- Max. thermal module resolution of 1280 x 720 px
- Optical: 13 mm to 261.5 mm focal length
- Thermal: 72 mm to 900 mm focal length
- IP67-certified protection

RD SERIES

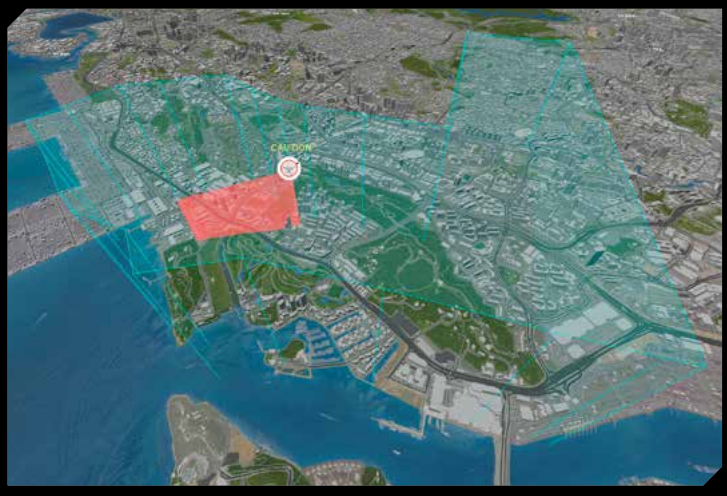
Fully integrated modular radar capabilities

Using an (optional), sophisticated radar system, the AARTOS™ DDS can automatically determine and display the exact position, flight direction, altitude, speed and classification of an inbound drone. The trajectory of the flight can also be tracked in real-time as a 3D model.

The system distinguishes between birds, fixed-wing drones and propeller drones. When a UAV enters the designated no-fly zone, a multi-alarm can be configured.

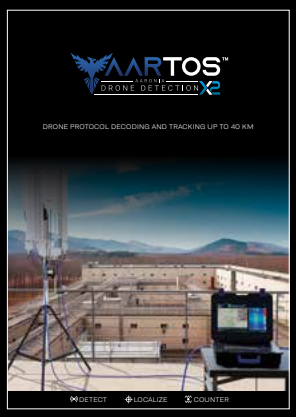
Complete customization

The required equipment for AARTOS™ can be configured to match detailed customer requirements. End customers will receive hardware that is tailored to their specific needs, with all components chosen individually. This guarantees optimal drone detection performance in any given terrain or area.



For detailed specifications of our products please visit
www.aartos-dds.com or use the dedicated QR-Code:

AARTOS™ Overview



AARTOS™ X2

AARTOS™ X5

AARTOS™ X7

AARTOS™ X9

AARTOS™ Counter UAV Systems

AARTOS™ System Integrations

AARTOS™ Catalog

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