AARONIA AG®
WWW.AARONIA.DE

F.A.Q. SHEET

DRONE DETECTION SYSTEM

aaronia.com/drone

- All-In-One Solution, NO Additional Hardware or Software Required
- Real-Time Remote Controllable via Ethernet / LAN / 3G / 4G
- Combine Multiple Systems for Large Area Surveillance
- Smart-Trigger for Drones in the Database
- 24/7 Gapless, Unlimited Recording

Distributed by: Reliant EMC LLC,
+1 408 916-5750,
info@reliantemc.com
www.reliantemc.com

MADE IN GERMANY

1. PERFORMANCE

WHAT IS THE DETECTION RANGE?

The Aaronia DDS has an unlimited detection range. Usually the detection range is the same as the maximum distance between the operator and the drone (or better). It always depends on the transmitter power of the drone/operator. Depending on the drone type it could be several km / miles without problems (e.g. the typical detection range for a standard DJI Phantom III is around 3km).

WHAT IS THE AVERAGE TIME TAKEN FOR THE DETECTION OF A DRONE?

Between 10µs to 500ms, depending on the complexity of the Aaronia DDS, number of used IsoLOG 3D antenna arrays etc.

Drones can be detected as soon as the radio link is established (the drone and the remote control are switched on). The radio-link establishment, take-off and climb usually take between 20 and 30 seconds, depending on the drone model. This can take significantly longer if the operator performs a full systems-check. Optical, acoustic and radar based drone detection solutions are not able to perform this kind of early-warning detection.

CAN THE AARONIA DDS DETECT THE DRONE OPERATOR?

Yes, with the Aaronia DDS it is possible to detect the Drone Operator as well.

IS IT POSSIBLE TO DETECT THE DISTANCE TO THE DRONE?

Yes, with a single Aaronia DDS (IsoLOG antenna + real-time spectrum analyzer) you already get an approx. indication of the drone distance. For an accurate distance measurement via triangulation however it would be necessary to have at least 2, better 3 systems.

CAN THE SYSTEM DETECT SEVERAL DRONES AT ONCE?

Yes, the system can detect several drones at once, including the same as well as different models.

WHAT ARE THE DETECTION MECHANISMS?

Real time RF signal detection and Smart-Trigger-Pattern triggering.

DOES THE AARONIA DDS ONLY WORK WITHIN LINE OF SIGHT?

Accurate detection is best within line of sight but the Aaronia DDS can detect RF signals even behind buildings, inside forests, behind trees, bushes or within a crowd of people. This is the nature of RF signals. As mentioned the range is almost unlimited it simply depends on the signal strength of the drone and/or operator.

DOES ONE AARONIA DDS ENABLE 360° COVERAGE?

Yes, the IsoLOG 3D antenna covers 360°. It can also be adjusted to specific needs if e.g. 90° or 180° (edge-) coverage is requested only.

DO YOU HAVE ANY PRODUCTS THAT CAN PREVENT A DRONE FROM OVER-FLYING A FACILITY?

Yes, we are working with different partners and are able to offer various countermeasure-solutions to "keep the drone away". Please contact us for further details.

HOW DOES THE AARONIA DDS WORK WHEN YOU DON'T KNOW WHICH FREQUENCY RANGE THE DRONE IS USING?

Since the Aaronia DDS offers an extremely fast scan and hop mode, it can either be set up to hop between all "typical" drone frequency ranges (e.g. 433MHz / 915MHz / 2,4GHz / 4,3GHz / 5,8GHz) or even sweep a complete frequency range (e.g. 100MHz to 6GHz).

DOES THE AARONIA DDS SUPPORT 24/7 SURVEILLANCE / RECORDING?

Yes, the Aaronia DDS can be switched to a 24/7 recording mode, to record the entire real-time spectrum without any gaps, as long as the internal/external memory (HDD/SSD) offers enough space. In case of an attempted crime or criminal prosecution, this information might be used as valuable evidence.

CAN THE AARONIA DDS BE SWITCHED TO AN EVENT RECORDING MODE?

Yes, the Aaronia DDS can be switched to an Smart-Event-Recording-Mode. This saves a lot of recording space (HDD/SSD) and simply eliminates useless data.

DOES THE AARONIA DDS EMIT ANY RADIATION THAT MAY INTERFERE WITH OPERATIONS OF e.g. A NEARBY AIRPORT?

No, our the Aaronia DDS does not emit radiation that can interfere with such operations.

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CAN THE AARONIA DDS BE EASILY DISGUISED OR CAMOUFLAGED?

Yes, you can cover the antenna with any material (e.g. camouflage netting), as long as it is non-reflective to RF (non-metallic). This is another advantage compared to optical, acoustic and radar based drone detection systems. If the Aaronia DDS is mounted on a vehicle, it looks like a typical TV or satellite antenna.

DOES THE AARONIA DDS WORK AT NIGHT?

Yes, the Aaronia DDS works 24/7, day and night. Light has no influence on the Aaronia DDS.

DOES THE AARONIA DDS WORK IN BAD WEATHER?

Yes, no problem at all. Fog, rain, snow etc. have no influence on the Aaronia DDS.

2. TRIGGER AND IDENTIFICATION

CAN THE AARONIA DDS DISTINGUISH THE TYPICAL DRONE SIGNAL FROM WIFI SIGNALS OR OTHER RF SIGNALS?

Yes, we are using intelligent pattern classification, enabling the Aaronia DDS to distinguish between those signals.

HOW DOES THE AARONIA DDS DISTINGUISH BETWEEN DIFFERENT DRONE MODELS OR SIGNALS?

We are using a sophisticated method of recording drone emission patterns. Those are saved in a constantly expanding database (Smart-Trigger-Pattern-Database or STPD). Optional upgrades are available via Internet. Furthermore, the user can add custom pattern recordings to their database for specialized use via the “Teach-In-Function”.

IS IT POSSIBLE TO PREVENT FRIENDLY DRONES FROM TRIGGERING THE ALARM?

Yes, you can use the implemented “Teach-In-Function” to teach the Aaronia DDS which drones are friendly. Once recorded, the Aaronia DDS won’t see the drone as a threat.

WHAT IS THE LIKELIHOOD OF FALSE ALARMS DUE TO COMMERCIAL PLANES, BIRDS OR OTHER AIRBORNE OBJECTS?

Those things don't influence the Aaronia DDS at all, so they will not produce any false alarms.

WHEN THE AARONIA DDS TRIGGERS AN ALARM THAT IT HAS DETECTED A DRONE, CAN IT PROVIDE ANY INFORMATION AS TO THE LOCATION OF THE DRONE OR THE OPERATOR? IF SO, TO WHAT LEVEL OF ACCURACY?

That depends on the number of systems/antennas you use. In case a single Aaronia DDS is used it can provide the direction from where the signal is coming from, the accuracy depends on the used IsoLOG type and offers up to 22,5° sector accuracy with the standard IsoLOG 3D 160 antenna. The real life accuracy is much higher, because the software can interpolate between sectors. In case several IsoLOG antennas are used it would be possible to use signal triangulation to locate the exact position (not only the direction) of the drone and/or operator.

3. INSTALLATION AND INFRASTRUCTURE

ARE THERE ANY INFRASTRUCTURE REQUIREMENTS FOR THE AARONIA DDS?

It depends on the system model: We offer portable systems with independent battery power supply. Other systems at least need a power connection. Systems based on multiple remote units need Ethernet cable connections and power. We also offer a GSM-based version, which doesn't require an Ethernet cable connection. You might need an Internet connection from time to time of you want to update the software or the Smart-Trigger-Pattern-Database.

IS IT POSSIBLE TO IMPLEMENT THE DDS INTO EXISTING SURVEILLANCE SYSTEMS?

Yes, the Aaronia DDS is delivered including an API, allowing the user to implement it into any existing surveillance software/hardware systems.

WHAT IS THE IDEAL HEIGHT OF INSTALLING ANTENNAS TO GET THE BEST RESULTS?

The higher, the better but at least 3m from the ground.

CAN THE AARONIA DDS BE PROTECTED AGAINST LIGHTNING?

Yes, a standard lightning rod can be installed and does not influence the Aaronia DDS performance.

WHAT IS THE USABLE TEMPERATURE RANGE?

The IsoLOG 3D antenna offers a usable temperature range of -40° to +80°C. Our real-time spectrum analyzer (XFR V5 PRO) offers a usable temperature range of -20° to +60°C.

CAN THE AARONIA DDS BE INSTALLED ON A VEHICLE?

Yes, the mobile Aaronia DDS can be installed on a vehicle (cars, trucks, vans).

CAN THE AARONIA DDS BE INSTALLED ON A BOAT?

Yes, the mobile Aaronia DDS can be installed on a boat, the IsoLOG 3D antenna is salt water proof.

IS THE AARONIA DDS WEATHER OR WATER RESISTANT?

Yes, the Aaronia DDS is weather- and splash-water resistant.

IS IT SALT WATER PROOF?

All parts of the IsoLOG 3D antenna are salt water resistant, so coast and marine environment is no problem.

DOES THE AARONIA DDS EMIT ANY RADIATION THAT MAY INTERFERE WITH OPERATIONS OF E.G. A NEARBY AIRPORT?

No, the Aaronia DDS does not emit radiation that can interfere with such operations.

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4. SALES, SERVICE AND DEMONSTRATIONS

WHO MAY NEED A DRONE DETECTION SYSTEM?

Companies from the automotive and chemicals industry, nuclear power stations, public facilities, institutions, such as prisons, ministries, airports, stadium operators, security firms, contractors and not to forget people that want to protect their private property.

IS THE AARONIA DDS FUTURE-PROOF?

The Aaronia DDS is under continuous development and always kept up-to-date. We also offer service-level agreements that contain regular updates to the Smart-Trigger-Pattern-Database, the DDS-Software and the firmware for our analyzers and even the hardware of the IsoLOG 3D antenna itself.

WHERE CAN I SEE THE AARONIA DDS IN ACTION?

We are demonstrating the Aaronia DDS at various trade shows and conventions world wide and cooperating with partners around the globe. If you'd like to inquire about demonstrations, please contact us at mail@aaronia.de.

WHAT IS THE WARRANTY TIME-FRAME?

The Aaronia DDS comes with a 2 years warranty which can be extended upon request.

WHERE IS THE AARONIA DDS BEING MANUFACTURED?

The Aaronia Drone Detection System is developed and produced in Germany.

WHAT IS THE TYPICAL LEAD TIME?

The typical lead time for a single Aaronia DDS is around 2-4 weeks, depending on the final configuration complexity.

WHAT IS THE COST OF THE AARONIA DDS?

To get a price of the entire Aaronia DDS, please feel free to contact us at mail@aaronia.de.

DOES THE AARONIA DDS HAVE ANY EXPORT REGULATIONS?

In most cases the Aaronia DDS has no export-/import-restrictions. Please contact us at mail@aaronia.de for further clarification.

DRONE DETECTION SYSTEM

- Measures drone and UAV RF emissions
- Specialized drone detection software
- Ultra-high range, up to several km
- Works at night, fog and bad weather
- Detects drones behind obstacles
- High tracking accuracy
- 360° coverage
- Made in Germany

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