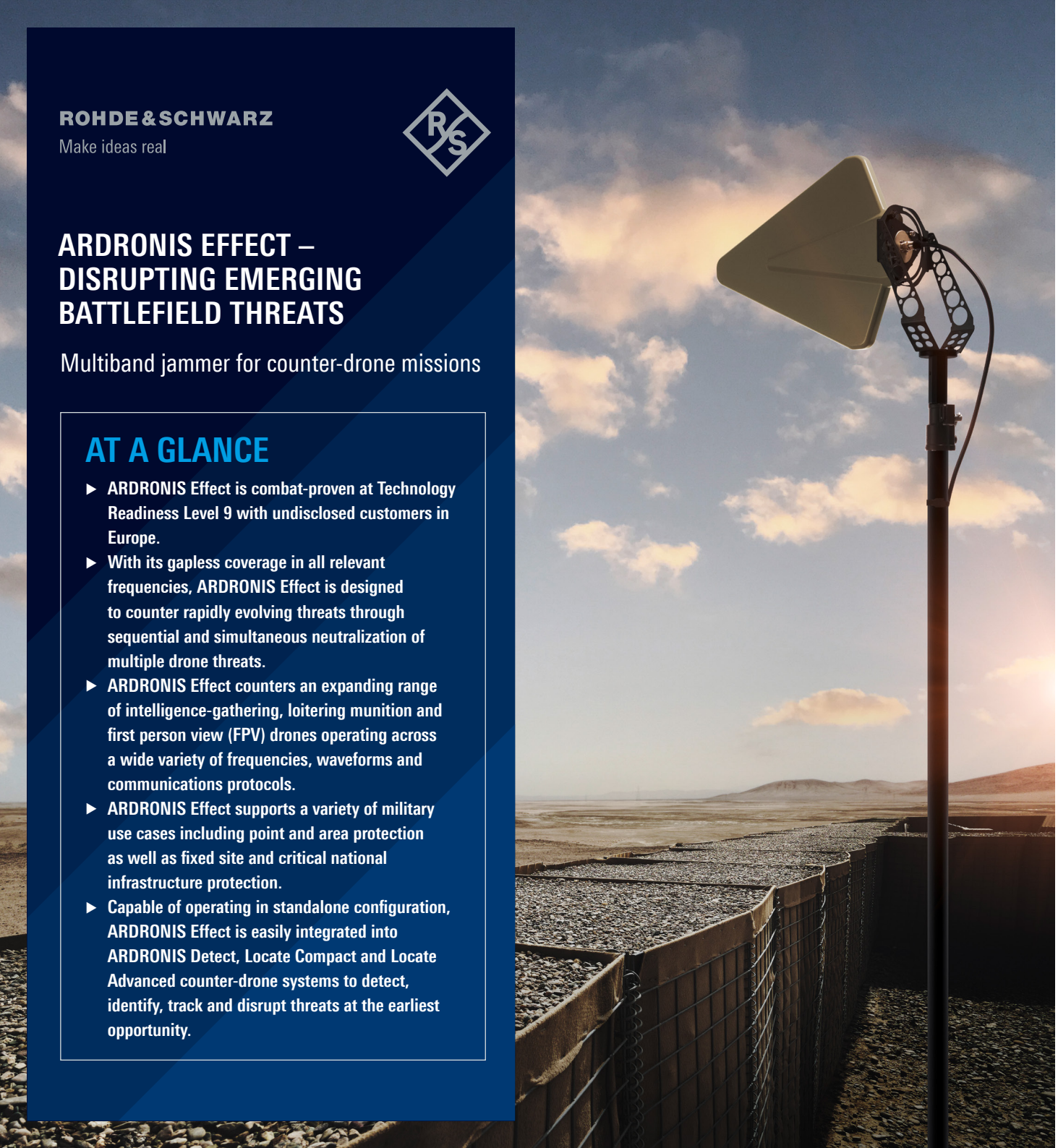
ROHDE&SCHWARZ
Make ideas real

ARDRONIS EFFECT – DISRUPTING EMERGING BATTLEFIELD THREATS

Multiband jammer for counter-drone missions

AT A GLANCE

- ARDRONIS Effect is combat-proven at Technology Readiness Level 9 with undisclosed customers in Europe.
- With its gapless coverage in all relevant frequencies, ARDRONIS Effect is designed to counter rapidly evolving threats through sequential and simultaneous neutralization of multiple drone threats.
- ARDRONIS Effect counters an expanding range of intelligence-gathering, loitering munition and first person view (FPV) drones operating across a wide variety of frequencies, waveforms and communications protocols.
- ARDRONIS Effect supports a variety of military use cases including point and area protection as well as fixed site and critical national infrastructure protection.
- Capable of operating in standalone configuration, ARDRONIS Effect is easily integrated into ARDRONIS Detect, Locate Compact and Locate Advanced counter-drone systems to detect, identify, track and disrupt threats at the earliest opportunity.



The Rohde&Schwarz ARDRONIS Effect solution enables armed forces to dominate the electromagnetic spectrum and protect personnel where it's needed most.

Situation and requirements

Across the current operating environment, drones are providing state and non-state actors alike an effective means of gathering intelligence and carrying out high-precision kinetic strikes.

Some of the most relevant examples include military-grade loitering munitions, commercially available FPV and other types of "kamikaze" drones.

Whether large, small, fixed or rotary wing, drones use different communications frequencies, waveforms and protocols, making them particularly difficult to disrupt on the modern battlefield. While commercial drones operate across one of five industrial, scientific and medical (ISM) bands, criminal and military drones are not limited to these bands and take advantage of a gapless spectrum.

To further complicate this problem, drones receive software upgrades as frequently as every few months, including changes in the frequencies, waveforms and protocols used to control them.

To successfully disrupt such a threat, jammers must be software-upgradeable to adapt to these changing threat profiles and capable of disrupting multiple frequencies sequentially or simultaneously, often with different power outputs depending upon threat types.

For more information, visit
www.rohde-schwarz.com

Rohde&Schwarz solution

The Rohde&Schwarz ARDRONIS Effect is designed to disrupt jam-resistant drones, operating individually or in swarms, even in the most contested and congested operating environments.

With its gapless coverage in all relevant frequencies, ARDRONIS Effect features a wideband amplifier, multiple signal generators, a directional or omni-directional antenna and a graphical user interface (GUI).

Together, its signal generators can generate 250 W of output power against a single target. Alternatively, they can operate individually with a different relative output power for each generated signal.

ARDRONIS Effect can operate autonomously with a series of presets, allowing it to rapidly and effectively disrupt known threats on the battlefield. Alternatively, the jammer can retain a human in the loop to adapt to drones operating outside ISM bands.

Controlled by the Rohde&Schwarz proprietary GUI, ARDRONIS Effect can be operated in a standalone configuration or integrated into any of the company's wider family of ARDRONIS solutions. These include ARDRONIS Detect, Locate Compact and Locate Advanced systems, which when combined can successfully detect, identify, track (both drone and pilot) and ultimately disrupt threats at the earliest opportunity.

Benefits

The Rohde&Schwarz ARDRONIS Effect is already in service with undisclosed European customers who are successfully employing the technology across multiple use cases.

These include:

- **Area protection**: Multiple, co-located tactical ground vehicles, equipped with either direction finding (DF) or gapless multiband jamming (MBJ) technologies create a large area of detection and a tactical area of protection on the battlefield. Drones can be passively detected and identified before being actively jammed by ARDRONIS Effect. This solution enables military customers to detect threats up to 70 km away before initiating jamming at ranges as far as 30 km.
- **Point protection**: One or more tactical ground vehicles equipped with a mix of DF and gapless MBJ technologies protect a specific position or convoy. ARDRONIS Effect benefits from a threat library of presets, enabling the technology to quickly disrupt known signals as early as possible. ARDRONIS Effect can also be manually slewed onto a target should a drone be optically or audibly identified in the local area. Both directional and omni-directional antennas can be used in such a case.
- **Fixed site protection**: Single DF and gapless MBJ technologies can be employed together to protect operating bases of various sizes. To avoid shadowing, multiple antennas can be positioned below DF equipment.
- **Critical national infrastructure protection**: ARDRONIS systems in combination with the ARDRONIS Wi-Fi decoding solutions are used to protect oil and gas facilities, airports, harbors and other strategic facilities.

ARDRONIS Effect
- detect/identify
- disrupt

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ARDRONIS Effect – Disrupting emerging battlefield threats
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Data without tolerance limits is not binding | Subject to change