



JAMMING SOLUTIONS



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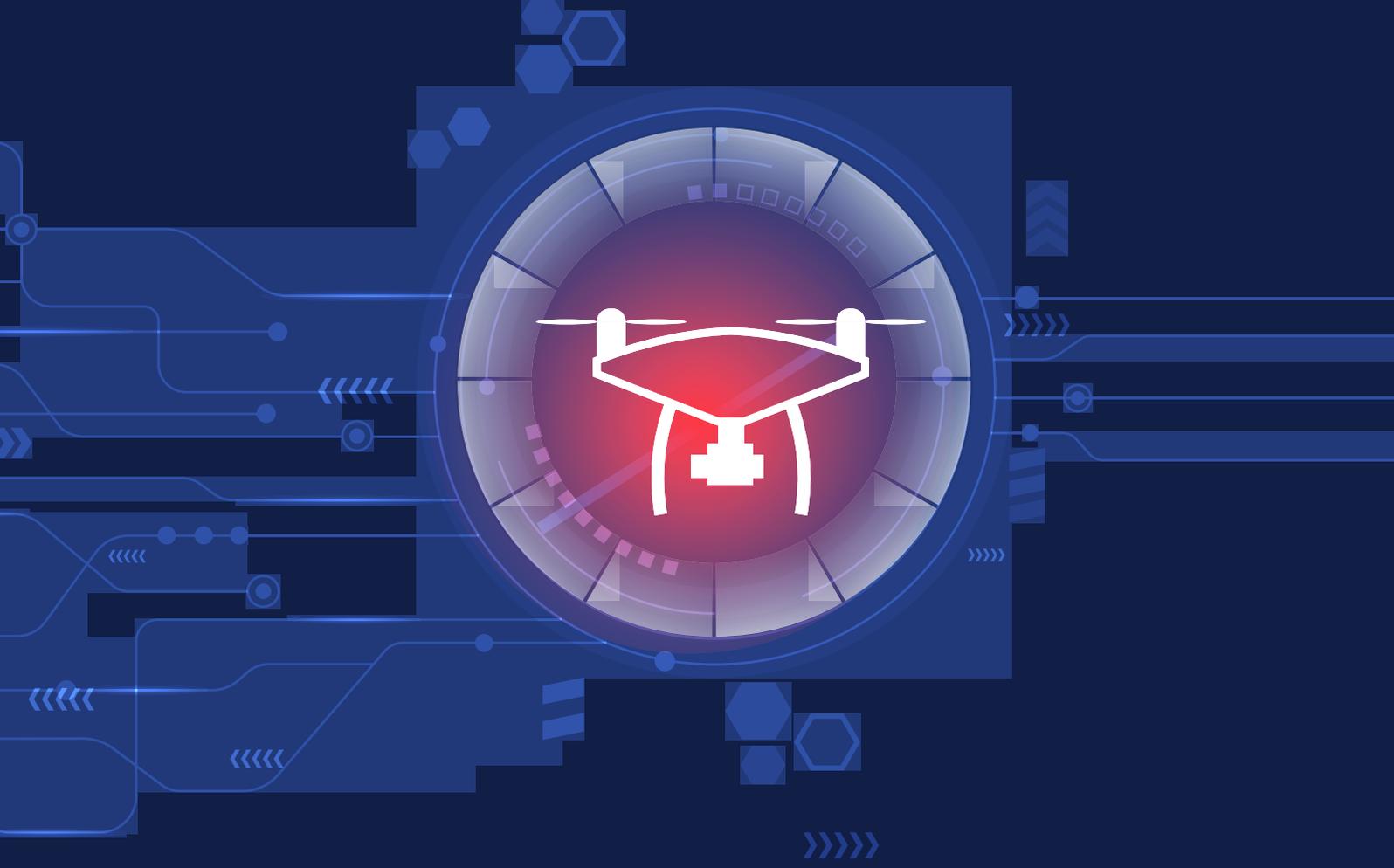
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Introduction

The aim of jamming is to prevent communications by electromagnetic means, or at least to degrade communications sufficiently to cause delays in transmission and reception. Jammers transmit electromagnetic signals in form of deliberate radiation, re-radiation or reflection with the objective of impairing the effective use of electronic communications systems.

Working closely with leading military forces and government agencies, Stratign offers a wide range of jamming and detection systems, used daily in conflict zones around the world. Stratign offers various configurations of Radio Jammers as well as RCIED (Radio Controlled Improvised Explosive Devices) Jammers.

DRONE JAMMER

Introduction

UAV Quadcopters and drones are becoming a nuisance and can compromise your privacy as they are becoming cheaper every day and more available. Several incidents within last few years revealed that there is a rapidly emerging threat caused by small commercially available UAVs. Nevertheless, the actual threat is not caused by the UAV itself, but by the payload the UAV is carrying.

Depending on the category of the UAV, the maximum weight of the payload could be 2-3 kg or even more. Harmful payloads could be anything from banners used for propaganda to cameras or microphones used for espionage, explosives or biological/chemical substances and either damage installations or directly harm people. Finally, the payload could also be contraband.

System Implementation

Stratign's approach towards countering the UAV threat is based on a four-step workflow:

- Detect the potential threat with the best possible probability of detection.
- Locate the drone on a digital map.
- Identify the potential threat as an actual threat with the least possible false alarm rate.
- Act on the threat by raising alarms or engaging the threat with a counter measure.



Features

- The system can detect, locate, identify and disrupt UAVs navigation system and link-up data to 5000mt. Shorter range systems are also available.
- Capability of locating direction and position of drone using multiple RF sensors in tandem regarding jamming coverage.
- Active solution capable of handling most of the commercial drones.
- Highly configurable as static, portable or vehicle-based systems based on customer requirement.
- Integrated RF sensor and jammer solution for instantaneous action on detection of drones.
- Deployable within a few minutes using 'Plug and Play' arrangement.
- Easily deployable in rural and urban environments.
- Jamming system has the capability to jam all types of global navigation satellite systems and to also disrupt different UAV command and control communication links employed by the UAV data links.
- The system can be operated manually or automatically for detection and jamming.
- The GNSS jamming system has enough output power to jam the whole global navigation satellite systems.
- Multiple systems can be used to cover larger vulnerable areas close to public places where civilian access is easy.
- The system can be used in both strategic and tactical operation.
- The jamming system can work against multiple targets (up to 40) at the same time.

NAVIGATION SIGNAL JAMMER

A satellite navigation or SATNAV system is a system of satellites that provide autonomous geo-spatial positioning with global coverage. It allows small electronic receivers to determine their location (latitude, and altitude/elevation) to high precision (within a few meters) using time signals transmitted along a line of sight by radio from satellites.

The signals also allow the electronic receivers to calculate the current local time to high precision, which allows time synchronization. A satellite navigation system with global coverage may be termed a Global Navigation Satellite System (GNSS). Some of the operational GNSS systems are GPS (USA), GLONASS (Russia), Galileo (Europe) and BeiDou (China).

System Solution

The all-known GNSS signals operate in the frequency bands established by international agreements, i.e. 1160-1300 MHz and 1550-1610 MHz. Some of the GNSS services have developed anti-jamming capabilities, however, the jammers of Stratign have been designed to suppress such receivers also since the frequency bands are known.

The general methods used for jamming GNSS signals are barrage jamming, sweep jamming and imitation

GNSS helps track or guide GNSS enabled devices such as vehicles, military systems, UAVs, missiles, etc. It can facilitate civil protection operations in harsh environments, speed up rescue operations and help coastguard and border control authorities in navigation through unknown territories. Success of new age security operations depend upon the ability to navigate correctly to the target locations. However, GNSS can also be used by subversive elements to navigate UAVs to deliver explosives or to take photographs of restricted/protected areas or to control guided missiles. This necessitates the need of jamming the GNSS signals to protect important installations and to disorient the advancing force.

jamming. Stratign uses a unique concept of a combination of imitation jamming and retransmission of the GNSS signals received in the specified bands of frequencies.

Stratign's GNSS Jammer is highly modular in nature and consists of three parts - Signal Generation Unit, Output Amplifier Unit and Antennas. The modular nature makes the jammers very adaptable to the requirements of different end users.



Features

- Can be used to jam all modern GNSS system.
- Unlike barrage and sweep jamming, Stratign's jammers require lesser power due to the techniques used.
- Capable of jamming at extended ranges (>50kms).
- administrator in case something goes wrong with the equipment.
- Highly portable and hence can be deployed in short-time frames.
- Modular nature of construction makes it highly scalable with respect to output power, frequency bands, etc.

VEHICLE MOUNTED RCIED JAMMER



Remote Control Improvised Explosive Devices (RCIEDs) have become a more common threat to military personnel/VIPs and needs a reliable deterrent. Safety of such personnel and those involved in VIP protection or bomb disposal is of paramount importance for national security. With advancement in digital technology, the terrorists and antinational elements are increasingly using cellular phones or digital radios for detonation of

IEDs. In such a scenario, Stratign's vehicular jammer plays a vital role in extending protection against remotely operated IEDs. Stratign had developed a vehicle mountable IED signal jammer which can effectively operate up to a range of 150m-300m radius based on the signal environment. The product can be easily mounted inside a vehicle with roof mounted antennas and can operate while on the move.

System Solution

The system is modular in construction with independent RF signal generators covering the complete frequency band from 20-6000 MHz. Based on the sub bands which are to be jammed which can be selected by the operator, the output from the corresponding RF modules are amplified using the inbuilt amplifiers and fed to the

jamming antennas. The system cumulative power output varies based on the configuration requested by the customer. The system comes with a wired remote control.



Features

- Designed with ultra-broadband frequency bands, 20-6000MHz.
- Integrated smart active cooling system allows for continuous operation of the system.
- Very effective against most common RF signals.
- Options for active or reactive jamming.
- System can operate from either battery or generator system.
- Operators can select the working frequency bands and output power of each module through the system software and system operation can be performed from the driver's console unit.
- 'Plug and Play' design facilitates easy upgradation and maintenance. Defect in any module will not affect the normal operation of other modules.
- Mil-spec standard casing, shockproof and drop resistant, available for the vehicle operations in a worst field environment.
- Each module can be separately set ON/OFF.

MAN-PORTABLE/BACK-PACK RCIED JAMMER



Back-Pack Jamming System, is designed using state-of-the-art technology to ensure the most effective jamming and are equipped with fully integrated broad-band jamming system.

It is highly portable and light weight, most suited for back-pack operations. It can also be mounted on a vehicle to provide convoy protection or in pelican type

Features

- Modular construction enables easy maintenance, repair and upgrade.
- Highly portable and suited for rapid deployment.
- Waterproof, dust proof, weather-proof ruggedized case.
- Designed with the most advanced technology.
- Compact size & light weight, making it easier to carry.
- Internal rechargeable battery: 24AH.
- Systematic Smart Cooling System to ensure prolonged operation.
- The general design of the system meets the military requirements.



INTELLIGENT CELL PHONE JAMMER



Introduction

Unauthorized cellular phone conversations at sensitive/protected places is a serious threat to security. In such places, there will be a set of people who are authorized to use cell phones and there will be people who are not authorized to use cell phones.

It is possible to jam the cell phone communication in a designated area by using traditional Cellular Phone Jammers. However, these Jammers transmit signals on the same radio frequencies as mobile phones, disrupting the communication between the cell phone base station and the phone, effectively disabling all mobile phones within the range of the jammer.

The problem with these Jammers is that they block all the cell phone communications within its coverage range. Even legitimate users will not be able to communicate, when such jammers are in operation.

Stratign's Intelligent Cell Phone Jammer System is designed to overcome this major disadvantage and can Whitelist/ Blacklist subscribers. The unique technology used in this jammer allows the operator to selectively block communications of the users within its coverage range, thus, allowing authorized phones to operate and block unauthorized phones.

System Solution

The system provides the operator with complete control over GSM phones operating within its premises. The system is highly advanced and is capable of automatically scanning and detecting all active 2G, 3G and 4G mobile phones within its coverage area. During scanning, the system automatically collects the handsets SIM identities (IMEI and TMSI) which can be used to identify authorized and unauthorized phones. The operator can allow authorized phones by adding them to a GUI based

Whitelist, whereas unauthorized phones will be automatically jammed and will be added to the Blacklist.

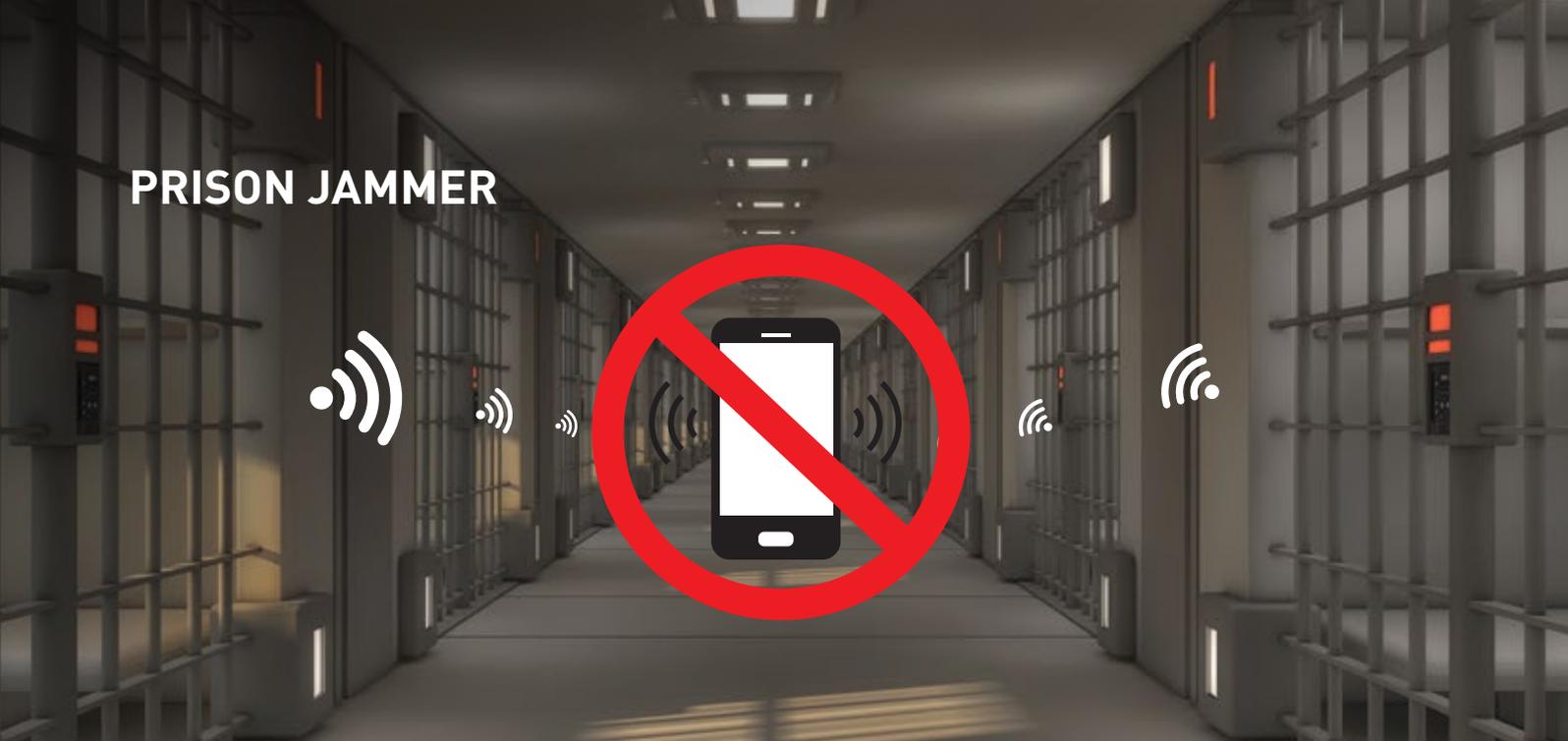
The system also collects the model number of the phone, service providers parameter like Mobile Country Code (Mobile Network Code), etc. The system can also be integrated with Stratign's Handheld Direction Finder, to locate unauthorized phones within the premises.

The standard system has an operational range of up to 500 meters. However, in built up areas, due to screening effect, the ranges may reduce or can create dead zones. In such scenarios or for larger areas, multiple systems can be deployed in a networked mode and can be controlled centrally through a common GUI.

Features

- The system can create a white list for subscribers allowed to communicate and automatically denying services to all other phones in the area.
- The system is flexible and can be upgraded to cover larger areas or new 2G/3G/4G/5G networks.
- There is no limit of phones that can be added to whitelist.
- The system can jam all 2G, 3G, 4G and 5G Phones which are not there in the whitelist.
- All the scanned parameters can be stored in a database for future analysis.
- Stratign's Direction finder can be integrated (optional) to physically locate and capture hidden mobile phones.
- The System can be remotely controlled using LAN or WAN.
- Multiple systems can be deployed in networked mode and controlled centrally to cover larger areas or dead zones.

PRISON JAMMER



Introduction

Unauthorized cellular phone conversations at sensitive places like Prisons, Court Houses, Military Facilities etc. is a serious threat to security. In most prisons, inmates are forbidden from possessing and using mobile phones. Mobile phones are one of the most smuggled items into prisons. They provide inmates the ability to make and receive unauthorized phone calls, send email and text messages, use social media, and follow news pertaining to their case, among other forbidden uses. They can also use the cell phones to communicate with their handlers and share information which can have serious security ramifications to the prison or the nation.

Jammer is specially developed for prisons and other large, delicate premises, for example military and governmental compounds. This is built into special metal enclosure and features an efficient "smart active" air filter cooling system that allows the system to operate constantly for 365 days/ 24 hours/ 7 days even under hot weather.

Its secure design safeguards the system and ensures continuous operation of the system without any hindrances from the prison inmates or unauthorized prison personnel.

Features

- The system is capable of jamming 2G, 3G, 4G and 5G phones in its area of influence.
- Multiple systems can be deployed and integrated over any available TCP/IP local area network and can be controlled centrally from one terminal. The equipment supports local or remote control monitoring.
- The jammer uses DDS technology to give more effective jamming performance.
- Up to eight frequency bands can be integrated into one jammer unit.

- The system jams only the downlink bands, thus, enabling normal functioning of the BTS and hence will not affect normal communication of other cell phones outside the coverage of jammer.
- Special waterproof and dustproof, IP55 metal aluminum housing for all weather protection.
- Modular Configuration-Easy for future upgrade and maintenance.
- Continuous operation, even in hot climates, with no time limit.
- Heat sink designing combined with the fans to ensure system does not get heated up.
- Open circuit protection (VSWR) ensures that no system burns out in case of antenna short circuiting or disconnection.
- Directional or Omni directional antenna combination used to ensure adequate coverage of the prison area.
- System access only by authorized persons through secure login.
- Optional UPS and battery backup in case of main power failure.

Main Applications

- Prisons and other large sensitive locations such as military or governmental compounds.
- Oil and Gas Storage Facilities and fields.
- Security Services, Military Units, Secret Services.
- Museums, Border Patrol and Drug Enforcement, Customs, etc.



SATELLITE JAMMER



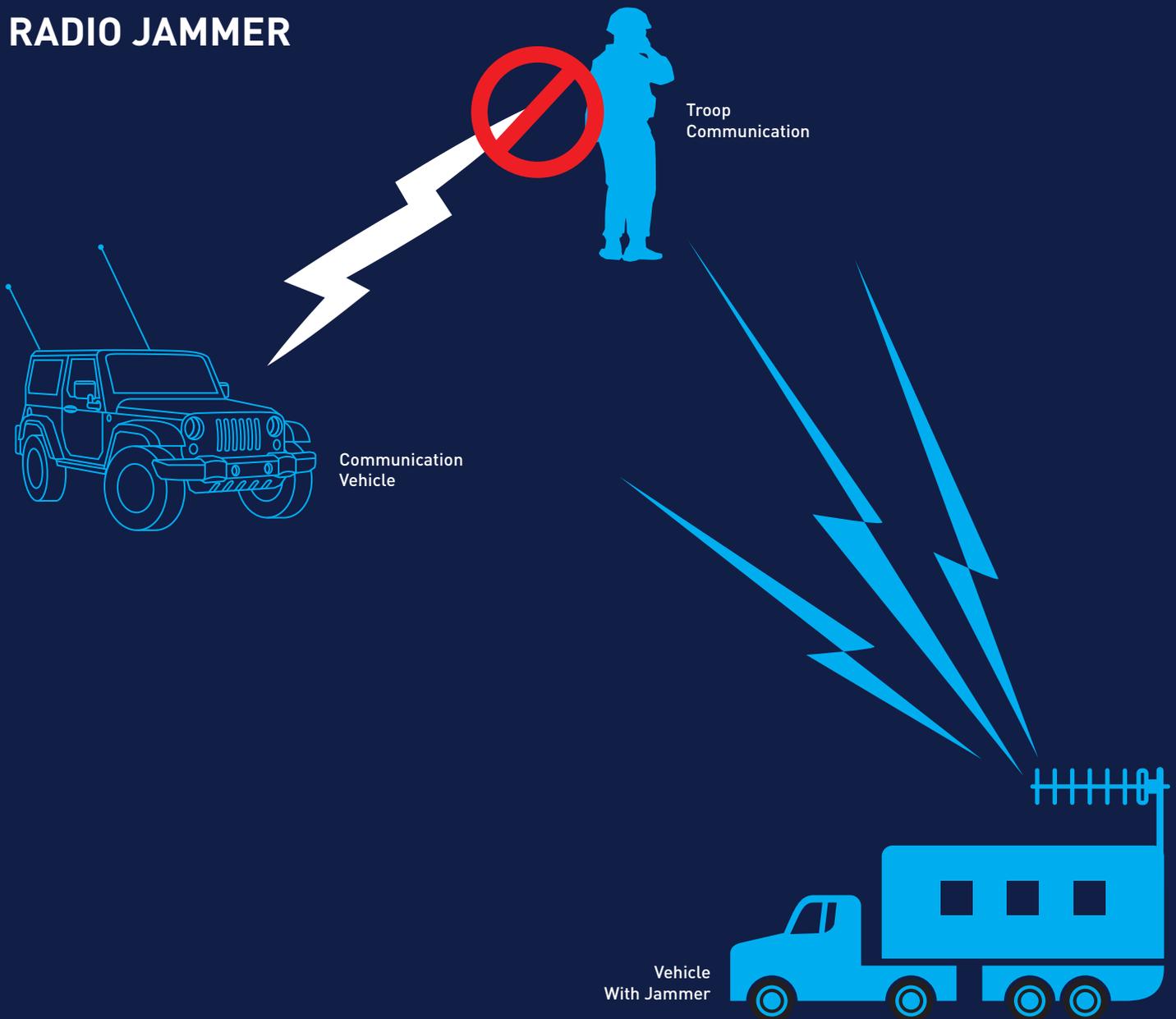
Stratign's C, X, Ka & Ku band Satellite Jammer is a latest development in response to various requirements from customers who are interested in deploying jamming systems and sub-systems to fight terrorism and illegal usage of Satellite Spectrum technology. The system is an integrated platform, which can be deployed on Land (Vehicle, Shelters, and Telecom Towers, etc.), Air (Aerostats/Balloons) or in sea (Cargo Vessels/Boats). The basic objective of the system is to conduct jamming on Downlink Signals of a frequency of Interest. These frequencies can be on a TV channel or even of a VSAT

network. The system caters to VSAT terminals operating in C, X, Ka or Ku band and is designed on customer specific requirements. The Static Variant currently enables the customer to jam communications in an area of 20x20 kms. To jam a bigger area, multiple systems can be used simultaneously.

Stratign also offers solutions to jam the uplink signals of the satellites thereby disabling the satellite transponder completely.



RADIO JAMMER



Stratign's Radio Communication Jammers are intended to create active barrage jamming in tactical units of the enemy within the frequency range from 20 MHz to 6000 MHz. We also have specialized solutions with frequency range of 1.5 to 120 MHz which covers the frequencies of all tactical military HF and VHF radios. Stratign is proud

to provide multiple range of Radio Jammers supplied in customized vehicles, single-use artillery shells and man-pack versions.



Wi-Fi Jammers



Stratign jammers being modular in nature can be specifically configured to jam only Wi-Fi links in the vicinity. These jammers can be effective in small or large meeting rooms as the power output is variable by the

user. The jammer can be configured into highly portable carrying cases for operation in outdoor areas with larger coverage distances. The jammer can interfere with both 2.4 GHz and 5 GHz Wi-Fi networks.

Smart Wi-Fi Jammers



The standard Wi-Fi Jammers will block all Wi-Fi networks in its area of influence. Stratign has developed a unique solution which will allow blocking of specific Wi-Fi networks by their SSID. The system scans the area for all the available networks and displays the details of

all networks in the area along with their SSID. The operator can then disable a specific Wi-Fi network by the SSID. The other Wi-Fi networks will continue to work.



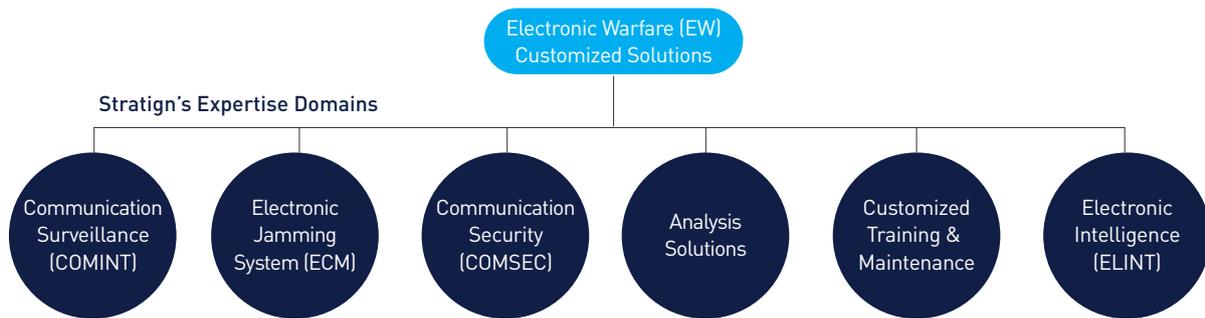
Cell Phone Jammers



Unauthorised use of cell phones in restricted areas is a cause of serious concern to the LEAs or Security staff globally. Stratign provides solutions for jamming cell phone communications in a specified area. This area can range from a small conference room to larger areas such as a restricted area or government offices, etc. The power transmitted by the system can be adjusted by the

operator to increase or decrease the coverage area, based on the on-ground requirement. Multiple such systems can be networked and controlled from a central control centre. Since the jammers are modular, the frequency bands can be made specific to the country or requirement.

OUR EXPERTISE



Stratign is a UAE based company established in 2002 mainly working in the field of COMINT, ELINT, COMSEC, ECM and Customized Training for govt. defense and law enforcement agencies worldwide. We have offices in UAE, Singapore, India & Egypt and have successfully completed projects in more than 54 countries in Africa, Middle East, South America, and Southeast Asia.

Our key skills include design and integration of complex software and hardware solutions. Stratign has a committed and highly skilled team of researchers, engineers and technicians who can provide precise, tailored solutions for the challenges faced by our customers globally. We believe in providing solutions

rather than products. Further, Stratign has tie-ups with renowned global R&D institutions to further supplement our existing research capabilities.

Stratign has always believed in understanding customer requirements and providing tailor-made solutions to meet operational needs. We have an experienced in-house software development team capable of integrating third party systems and software into our solutions or vice-versa. All our systems are modular in nature and can be configured according to demands of the customer.





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