STAR - Protection RCIED Jammers Family

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General introduction

STAR family jammers are especially intended for a protection of special units, convoys, VIPs and soldiers against Radio Controlled Improvised
Explosive Devices (RCIED). There are three basic members of the STAR family:

STAR V is intended especially for a protection of convoys with vehicles which are not equipped with its own protection jammer (like VIP, trucks, logistics troops, etc.).

STAR Light 3 is a modular, multiband, programmable, digital jammer for vehicle protection. Modification for fighting vehicles is also available
(output power 200 W, 3 antennas only!).

STAR Light 3E1 (SL 3 E1) is based on jammer STAR LIGHT 3. The output power of SL 3 E1 is increased to 325 W and power is divided into 6 bands.

STAR Manpack C is intended for a protection of dismounted group of soldiers that are away from the protection umbrella of vehicle jammers and go into a building or an open area behind buildings where the vehicle jammers are not effective o not present (output power 80 W, operation time with accumulators approx. 2 hours).

All Jammers can be modified according to the customer’s requirements.

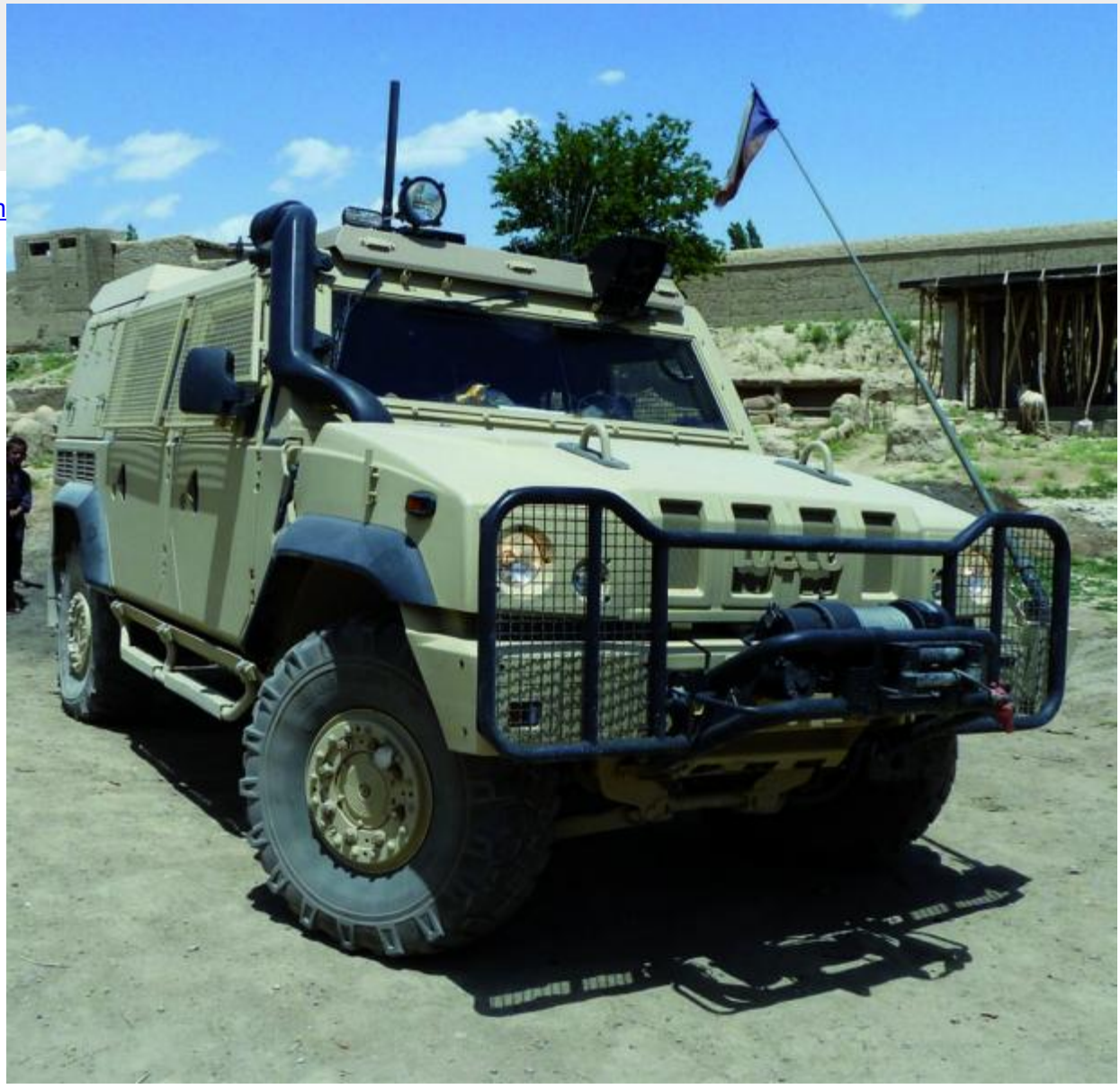
STAR V 740
Introduction

Protective modular jamming system STAR V 740 is intended for a protection against RCIED. The system either prevents the activation of RCIED or it can significantly reduce the distance for a bomb activation. The system is used to protect the special EOD teams or for a convoy protection.

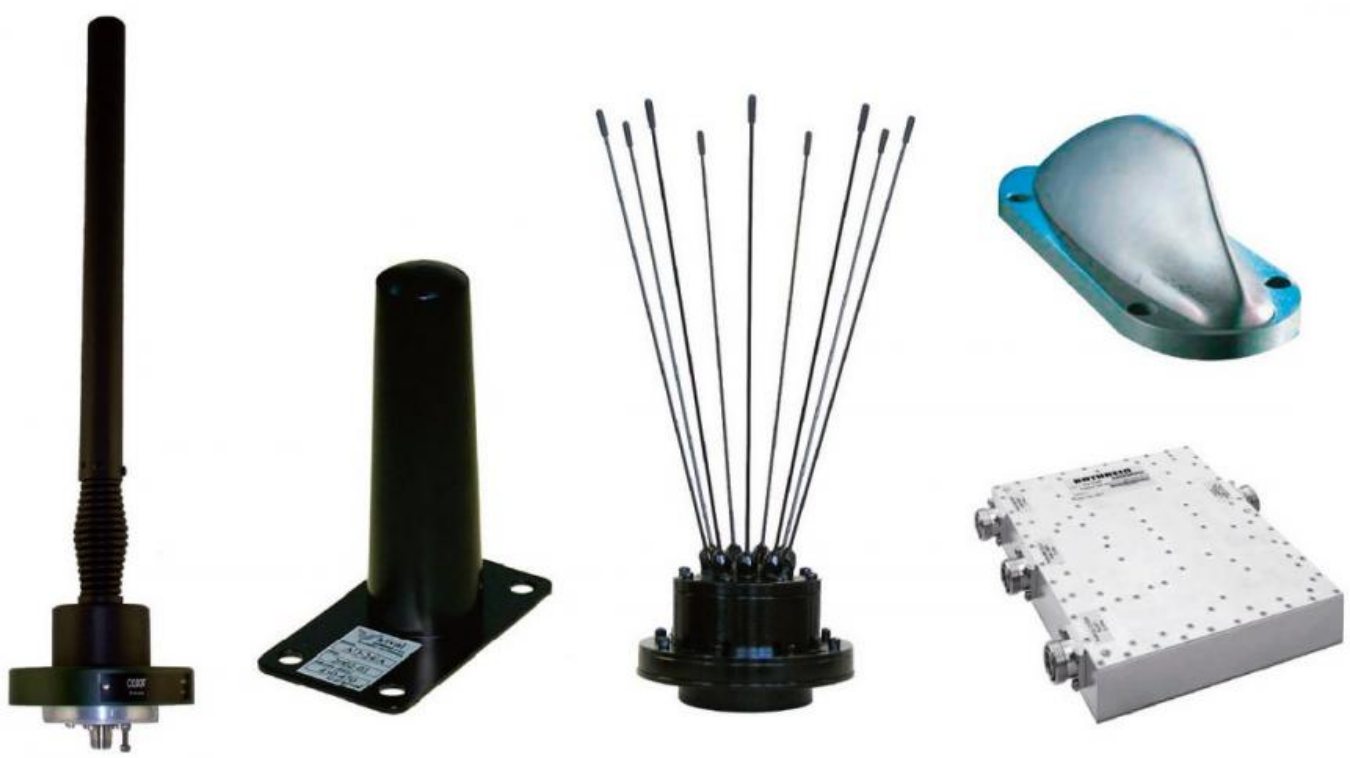
The jamming is performed by random frequency sweeping in a few frequencies sub-bands at the same time. Each sub-band has a possibility to set up to two communication windows for mutual radio communication. The jamming system is equipped with 8 wideband transmitters, 3 low pass fi lters, 1 combiner, 6 omni-directional antennas and 8 wide-band digit exciters. The higher level of jamming efficiency is accomplished by using more parallel subsystems and digital technology

The jamming system is intended as a mobile system which is installed in the vehicle. It is equipped with the omni-directional antennas that are part of the system. The output power of the jammer is up to 740 W. The jamming system is easily controlled and the failures are easily diagnosed. It is controlled on the front panel. The operator can switch on/off particular transmitting systems and subsystems, set up to three jamming sub-bands in each. Dwell time in each sub-banc can also be modified. Jammer is equipped with Ethernet, RS 485 and USB interface. System is also equipped with specia SW which can be installed on a notebook or a PC.
Special remote control box is also included. The system's voltage is from 22 to 30 Volts.

AT Comm



Omnidirectional antennas



STAR V 870
Introduction

The protection modular jamming system STAR V is intended for a protection against radio controlled improvised explosiv devices (RCIED). The system prevents activation of RCIED and it can signifi cantly reduce the distance for bomb activation. The system is used to protect the special EOD teams or for a convoy protection.

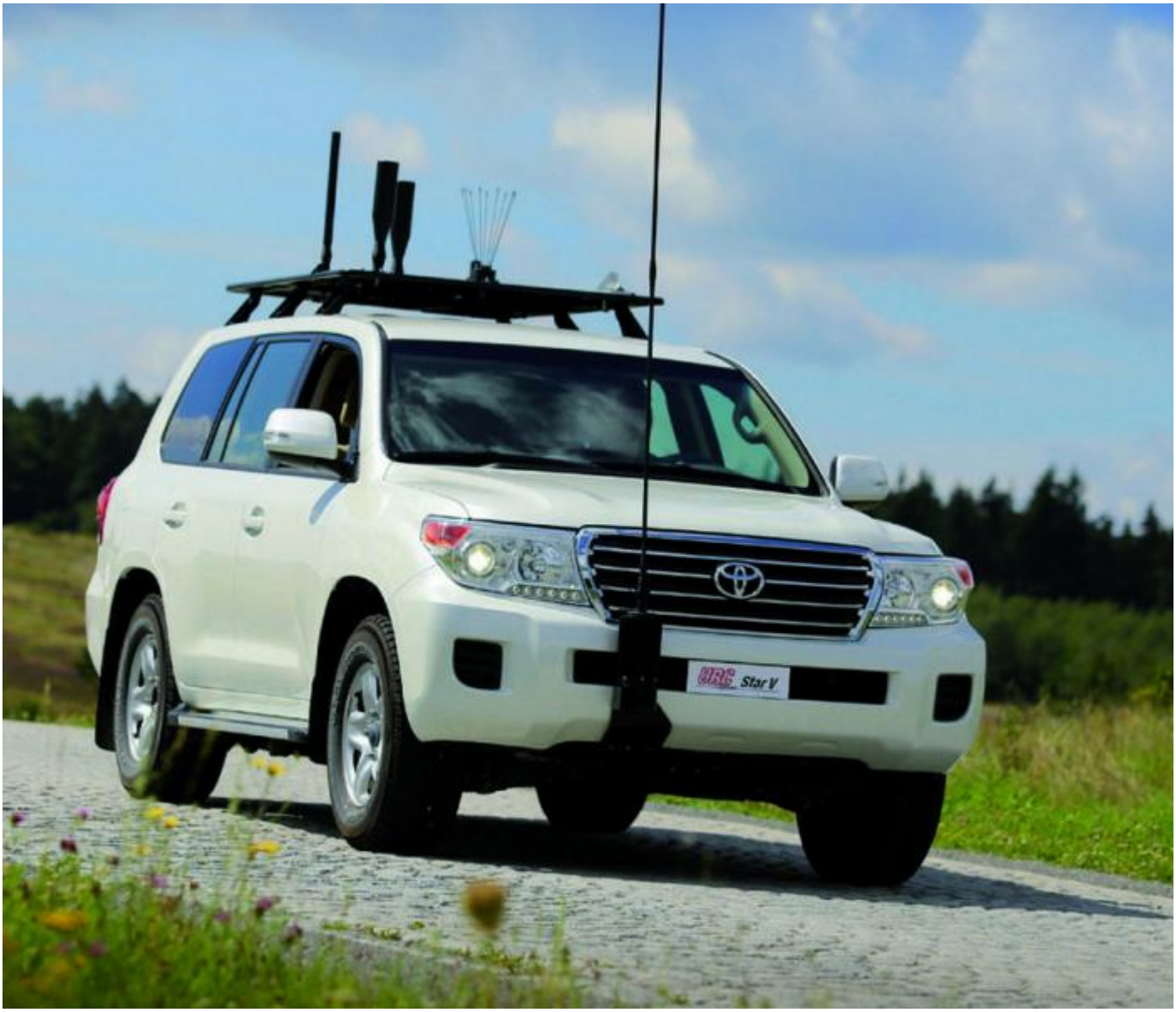
The jamming is implemented/done/realized by a random frequency sweeping in a few frequencies sub-bands at the same time. The higher effectivity of jamming is accomplished by using more parallel subsystems and digital technology (DDS and FPGA). Each module/band allows to set up to two communication windows for mutual radio communication. The operator can switch on/off particular transmitting systems and subsystems, set up to three jamming sub-bands per each module. The dwell time (DDS sweep rate) in each band can also be modified.

The jamming system is equipped with 11 wideband transmitters, 3 lowpass fi lters, 1 combiner, 9 omnidirectional antenna (type of antennas can be modified according to the particular installation) and 11 wideband exciters. The jamming system is intended to be a mobile system installed in a vehicle. It is equipped with the omni-directional antennas which are part o the system.

The output power of the jammer is up to 870 W.

The jamming system is easily controlled from the front panel and the failures are easily diagnosed. The jammer uses IP, RS 485 and USB interface. The system is also equipped by special SW which can be installed on notebook or PC. A special remote control box is also included.

The system is supplied by 26 to 30 Volts DC. The jammer is equipped with BITE by default.



STAR Light 3
Introduction

- ☑ Protective modular jammer STAR Light 3 is intended for a protection against RCIED
- ☑ The jammer either prevents activation of RCIED or it significantly reduces the distance for a bomb activation
- ☑ The jammer is primary used for an installation in fighting vehicles in order to protect them against RCIED effects
- ☑ Jammers are also used by IED teams

The jamming is performed by frequency sweeping in several frequency bands independently at the same time. Although an exciter works in all bands in a regime Random Digital Multisweep there is a possibility to jam only on specific frequencies (e.g.). Jamming system is modular. It could be equipped with up to 4 wideband amplifiers, 4 exciters and 3 omni-directional antennas. Digital technology allows simple setting of up to 2 protected frequency sub-bands (e.g. for communication of friendly radio stations) in each of 4 modules.

Total output power of the jammer in maximal configuration is for up to 250 W.

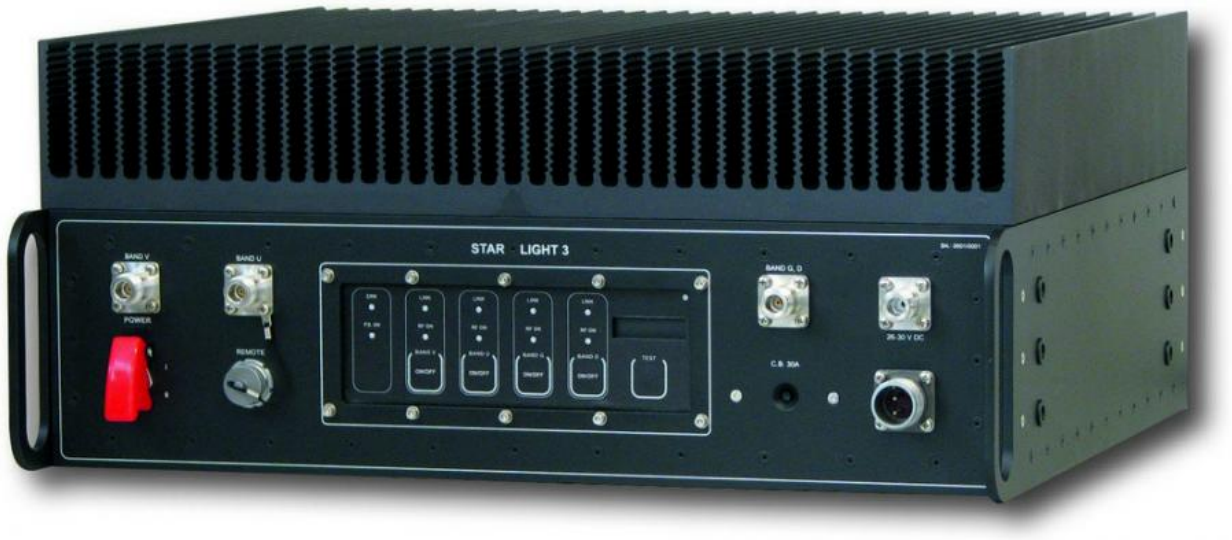
The jammer features an easy operation and simple BITE and diagnostics. The operator is allowed to switch the system on/off and separate transmitting modules (so-called mission programming for simple operation). The system indicates operational parameters and an error is reported visually and acoustically.

To set operational frequency bands and other technical parameters, the system includes interface RS 485, which can be used to connect a remote device unit with LCD and a keyboard. The jammer also includes LAN ETHERNET interface for communication with PC.

Special SW – STARConfig for PC can be used to load operational parameters to the jammer. SW – STARConfig is protected against improper use by an unauthorized person. Cooperative SW SPECON is intended for monitoring of radio situation and provides suitable input for SW STARConfig.

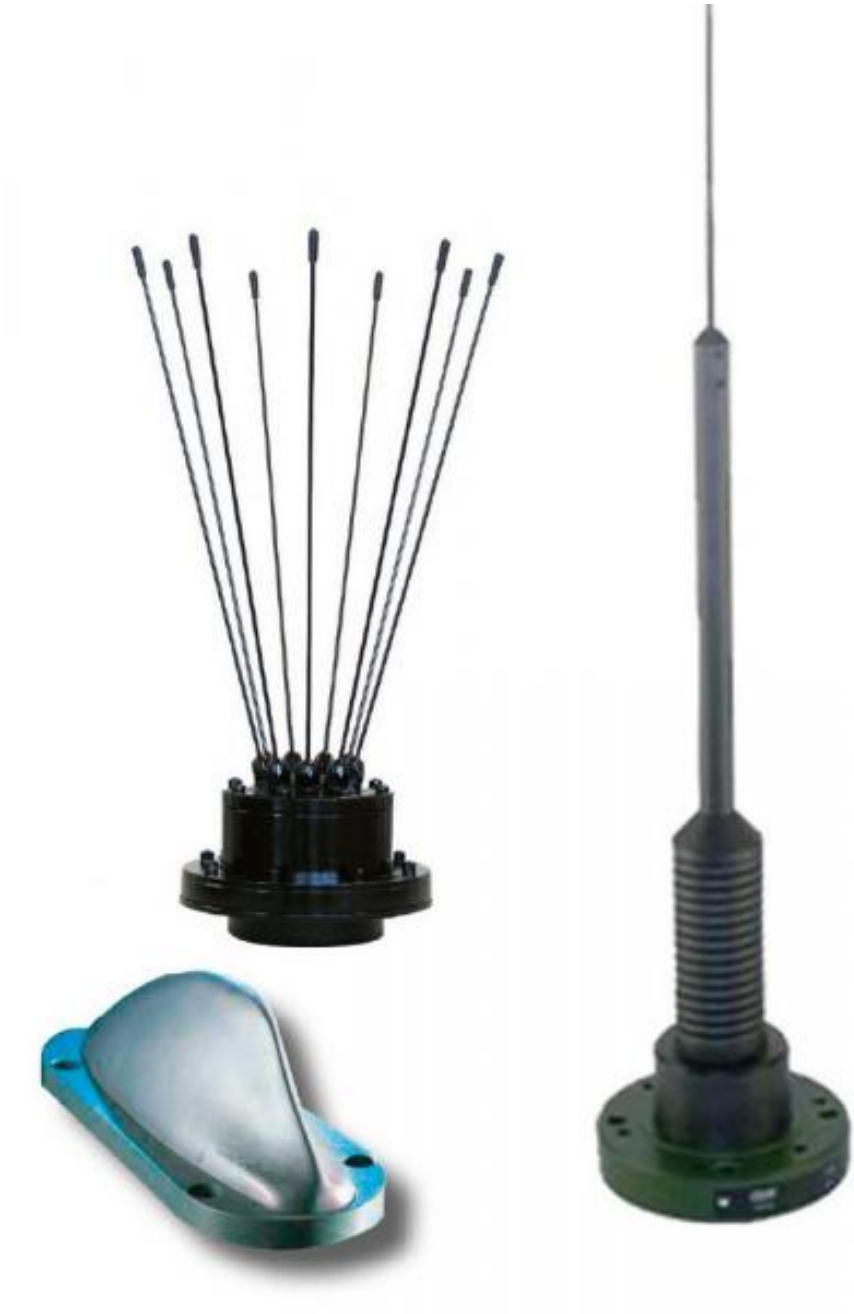
The jammer is equipped with a low-pass filter block module (bands V and U123) for better compatibility with radio communication systems and with a combiner to combine bands G and DCW into one antenna.

The system is equipped with DC Voltage in a range from 22 to 30 V. Mechanical solution is intended for installation into non air-conditioned space (e.g. cargo space of vehicle IVECO LMV, APC PANDUR, MRAP, DINGO, etc.).



Antenna band V

The WB25C0M is a rugged wideband antenna for high-performance communication and jamming applications in the 25 - 100 MHz frequency range – to be used on numerous kinds of vehicles.



STAR Light 3 E1
Introduction

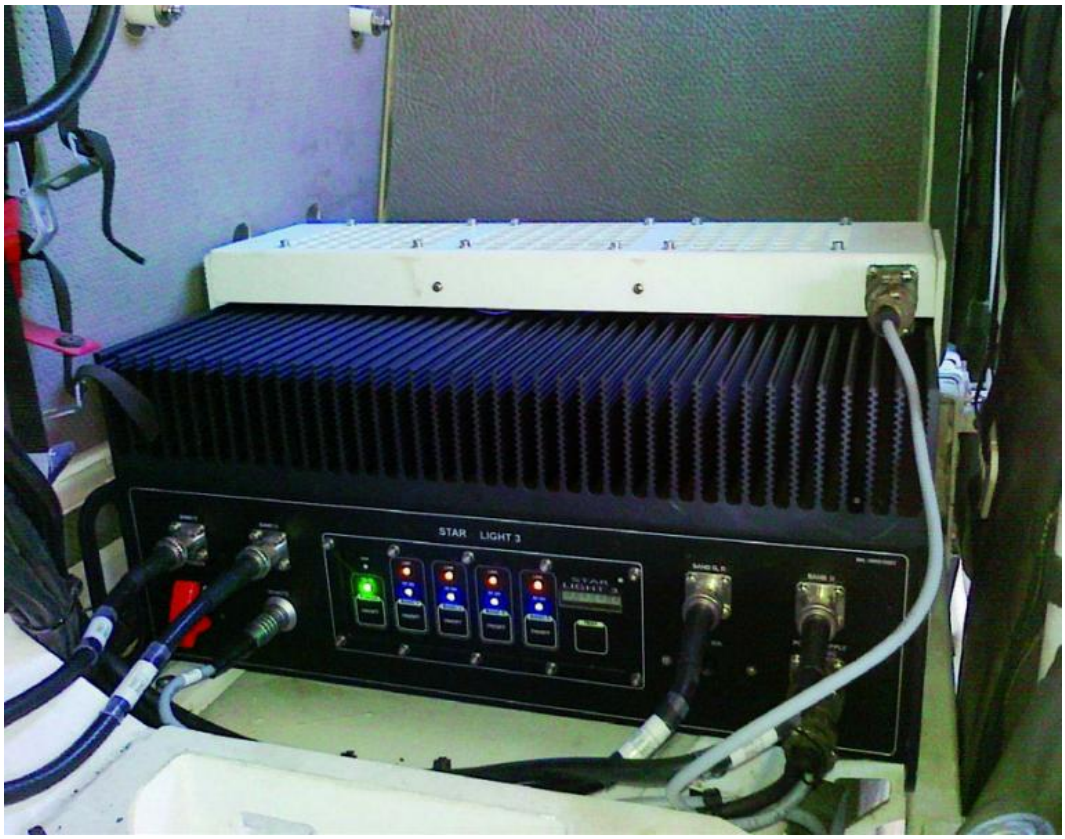
The jammer STAR LIGHT 3 E1 (SL 3 E1) is based on the jammer STAR LIGHT 3. The output power of SL 3 E1 is increased to 325 W and power is divided into 6 bands.

The jammer consists of two identical boxes A and B. Those two boxes can be tied together or can be installed on differen places into a vehicle. This “two box” solution is more fl exible from the installation point of view. In the box A, the control circuits system, sources of jamming signal (exciters) and power amplifiers for bands V and U are installed. In the box B, the control and protection circuitry are placed, as well as a power amplifier for bands G, D, C and W.

If the box B is installed closer to GSM and DCS antennas, the RF losses (on cables) are signifi cantly lower and the system is more efficient. It is very important especially for higher bandwidths because RF losses on cables are crucial for bands above 500 MHz.

The box A is a MASTER of the system and the box B is a SLAVE. Communication between the boxes is performed through the communication bus RS-485. RF jamming signals of bands G and D exciters are led out of the box A to the bo B by coaxial cables. Control of the jammer is possible by using a keyboard on the box A, or by using a remote control uni (RCU). These methods of operation may be combined.

The system (installed into a vehicle) uses an independent power source as an additional alternator combined with additional batteries (2 independent batteries 12V/90 A, dimensions 353 x 175 x 175 mm).



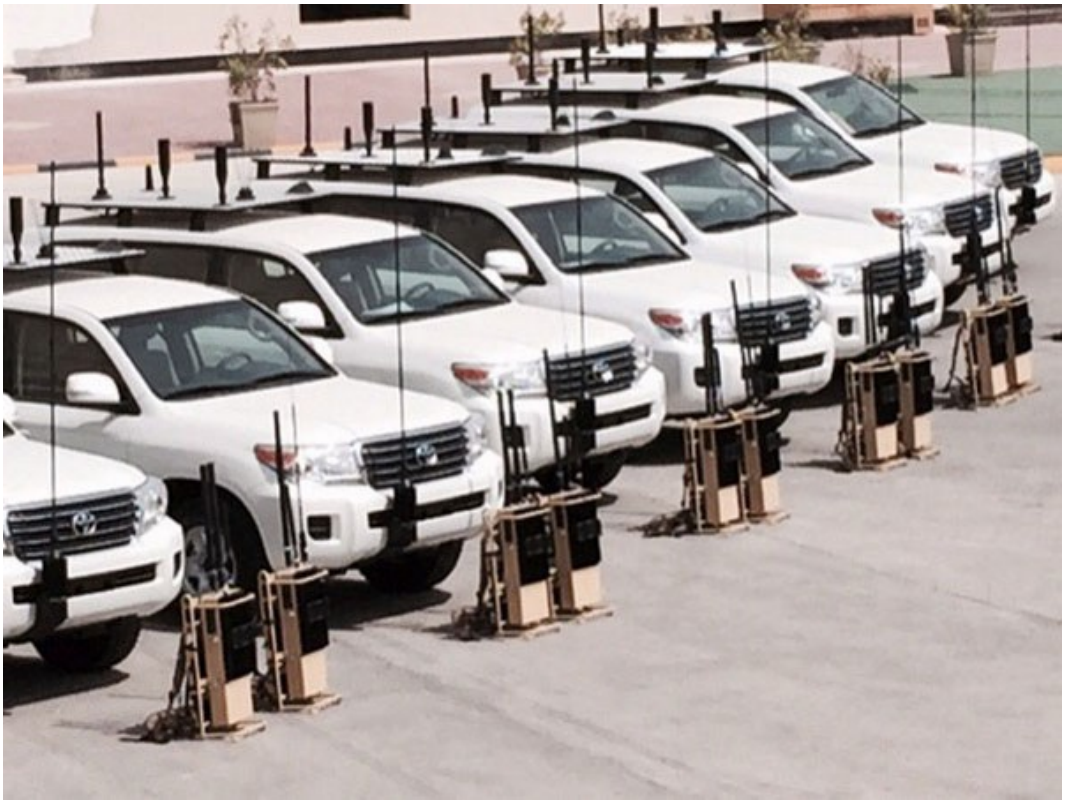
STAR Manpack C
Introduction

Protective modular jammer STAR - Manpack C is intended for a protection against activation of RCIED.

During its operation the jammer either prevents possible activation of RCIED or it dramatically reduces the distance for a bomb activation. It is used either to protect individuals, pyrotechnic squads or special units and convoys. STAR - Manpac C is a COMPACT system with a bearing unit and it includes a battery module as well. The jammer is carried on straps (specially designed harnesses).

The system includes 4 independent modules/bands (exciter - power amplifier) placed inside the unibody block. There are also control and processing units in this block. Each module transmits in a given frequency band. Minimal output power 2 W (nominally 25 W). Total output power is 100 W nominally.

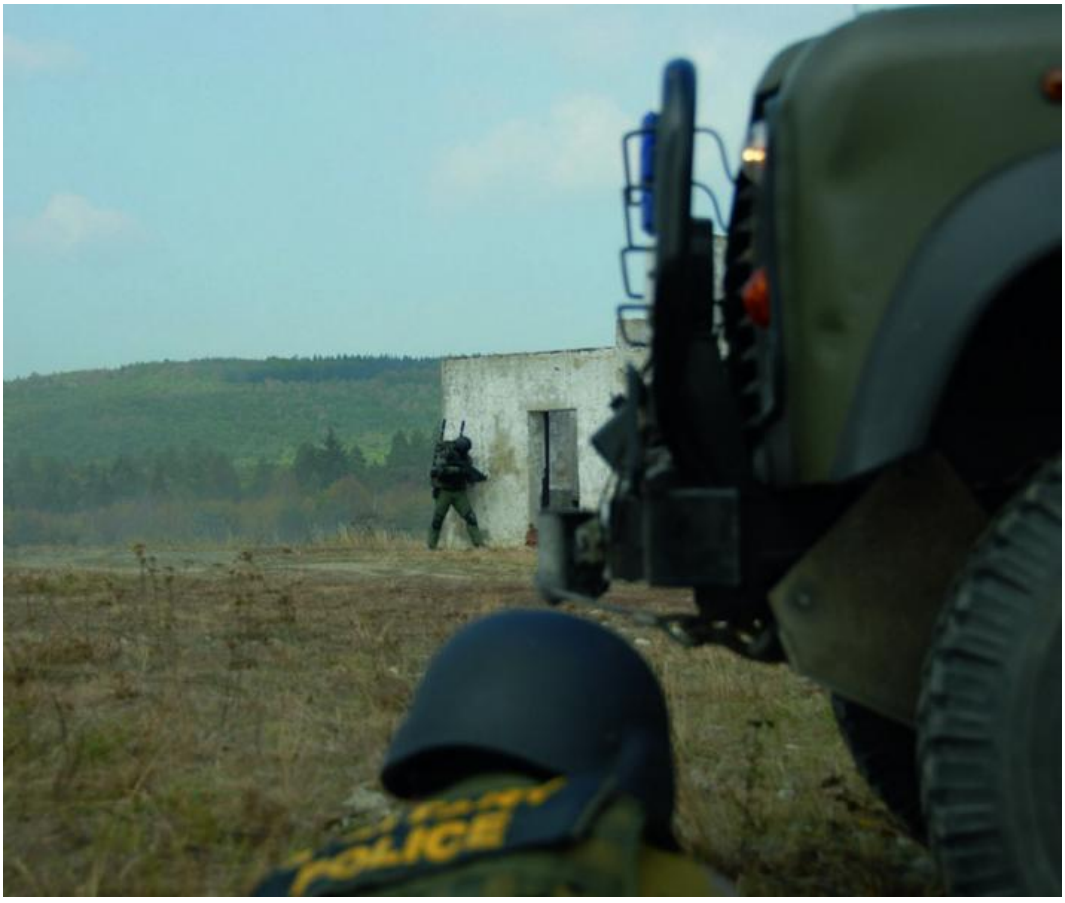
Jamming itself is performed by sweeping in multiple frequency bands at the same time. And in all bands the exciters work in "Digital Multisweep" mode so it is possible to jam e.g. only the selected frequencies/sub-bands. It is possible to preset START/STOP frequencies, frequency step and dwell time.



The system is equipped with 3 omni-directional antennas. VHF module and UHF module have its own antennas. RF outputs of upper bands (3 and 4) are combined into one high gain collinear dipole antenna. The lowest feed point of this antenna is elevated about 250 mm from the base of the antenna, allowing the signal to be radiated over the user's head. This reduces absorbed power and increases fi eld strength at the target (i.e. no need for additional antenna elevation).

The jammer is characterized by its simple operation and easy diagnostics (BITE). The operator is allowed to switch the system and the single transmitting modules on/off. The system indicates either operational status or a failure.

The system is equipped with a remote control unit RCU to set the working frequency ranges and other technical parameters. It is possible to upload and control the jammer with a special SW StarConfig (RCMS) on a PC. This SW is protected against a misuse by an unauthorized person. Power supply is provided from the Li-Fe battery which is buckled to the bottom of the jammer block.



Omnidirectional antennas

The operating time of the jammer is in the range of 45 to 100 minutes and is determined by the capacity of the battery. Th battery is available in three types which differ in capacity and weight. However, dimensions of all three types are identical

The jammer can be easily mounted into/on a vehicle. Antennas are placed on the magnetic holders in this case.

Manpack C can be modified according to the customer's requirements. It can be equipped with modules which are jamming only mobile phones (GSM, DCS, 3G, 4G), VHF/UHF modules or directional antennas, etc.

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