Critical Infrastructure Security

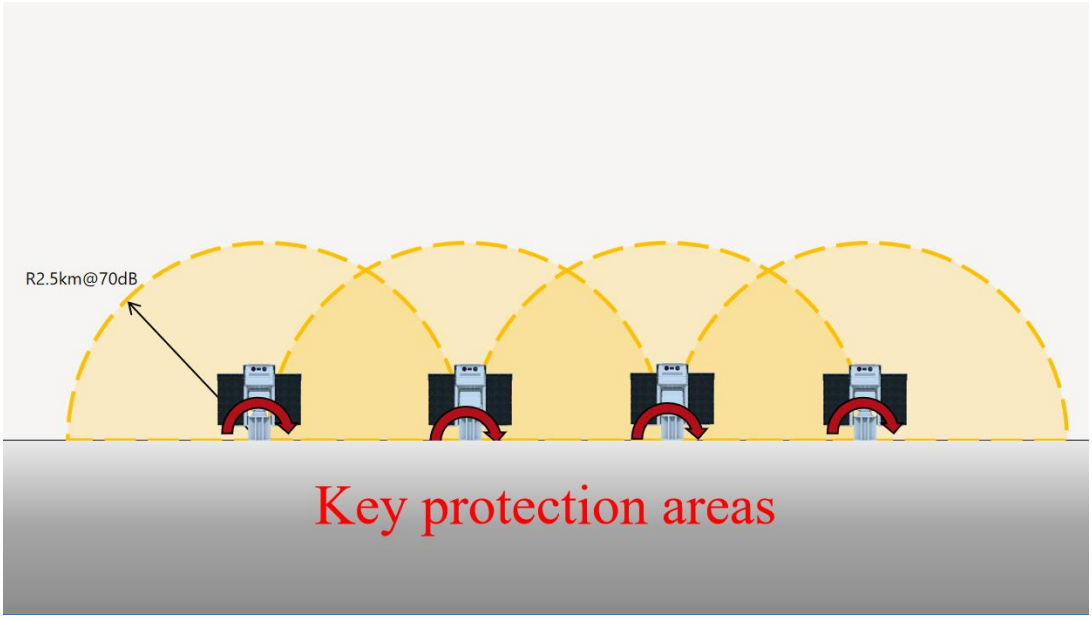
With the acceleration of globalization and the vigorous development of the social economy,the demand for security prevention in various fields has shown an explosive growth trend,and perimeter protection has become a key link in ensuring the security of important areas.Traditional perimeter protection methods have gradually exposed many drawbacks in practice.Although barbed wire can provide a certain physical barrier,its defense capability is limited,and intruders can easily break through by climbing,cutting,and other means; The infrared targeting device relies on infrared sensing technology,which is significantly affected by weather and

environmental factors. In severe weather such as rainstorm, sand dust, dense fog, or when small animals move around, branches shake, etc., it is very easy to generate false alarms, which not only consumes a lot of manpower for ineffective troubleshooting, but also may cause the security personnel to become less alert and miss the real invasion due to frequent false alarms. Moreover, whether it is barbed wire or infrared radiation, they only have passive warning functions and cannot take proactive measures to stop intrusion behavior. Their deterrent power is insufficient, making it difficult to effectively deter potential intruders.

In contrast, directional sound and light devices stand out with their innovative technology and outstanding performance. In terms of long-range deterrence, the strong sound system can generate a sound pressure level of up to 161dB (at 1 meter). With directional sound wave technology, high-intensity warning sounds can be accurately projected to a distance of 2000 meters, forming a powerful acoustic deterrence field that makes potential intruders wary before approaching the perimeter; The strong light system outputs 120 million cd of strong light, and the dazzling distance of green light can reach 1000 meters. In nighttime or

dimly lit environments,instantaneous strong light exposure can temporarily blind intruders and interfere with their movements.At the level of precision strike,the electric gimbal equipped on the equipment has the ability to rotate 360° horizontally and ± 45° pitch,with a positioning accuracy of ± 0.1° .Combined with high-definition cameras and intelligent analysis algorithms,it can quickly lock onto the target and achieve accurate sound and light projection,avoiding any impact on unrelated areas.Networking can be achieved when the distance between adjacent devices is ≤ 4km.When an alarm is triggered,2-3 surrounding devices will work together to block and eliminate blind spots in protection; Cluster management based on TCP/IP architecture supports one click global alert and group scheduling,deeply linked with video surveillance,and automatically triggers the full process of "monitoring warning response" in case of intrusion.It is particularly important that directional sound and light equipment is based on a non lethal design concept,which effectively prevents intrusion while not causing permanent harm to intruders.This not only conforms to humanitarian principles but also avoids legal risks.These advantages enable it to effectively compensate for the shortcomings of traditional protection methods,collaborate with

other security systems, and build an efficient and intelligent perimeter protection system that integrates monitoring, early warning, and active defense, creating a solid and reliable barrier for the security and stability of the target area.



In the perimeter protection of 270 kilometers, 70 directional sound and light equipment RH40Y are deployed on 6-meter-high anti rust columns with a spacing of≤4 kilometers. The coverage overlap rate of adjacent equipment is≥30%, and the spacing between key areas is≤2 kilometers to form a "circular protection circle"; In terms of intelligent linkage, the video surveillance system recognizes the intrusion and the device automatically turns around. It first issues a 110dB sound pressure level voice warning. If it does not evacuate, it will activate a 161dB strong sound+strong light flashing and link with 2-3 surrounding devices to form an "acoustic fence"; The system management monitors the

equipment status in real time through the central platform and generates fault work orders. It is connected to Beidou positioning to ensure that the response time of the patrol team is≤3 minutes. The equipment adopts UV resistant engineering plastic shell and heating and dehumidification module to adapt to complex environments. This solution relies on the ability of a single device with a 70dB sound pressure coverage radius of 2.5 kilometers and a coverage area of 1.6 square kilometers, reducing costs by 60% and construction volume by 80% compared to traditional solutions. TCP/IP architecture cluster management enables 500 devices to be scheduled through one platform, improving operation and maintenance efficiency by 75%; Adjacent devices are linked to form an "acoustic fence", with a positioning accuracy of ≤50 meters, a 90% increase in warning accuracy, and an 80% reduction in patrol labor costs for preset cruise paths; -The wide temperature design of 40 ℃~+60℃ and lightning protection shell can withstand extreme environments, with an average annual maintenance cost of ≤5% of the equipment's original value. The environmental adaptability covers more than 95% of the world's areas.