SECURITY

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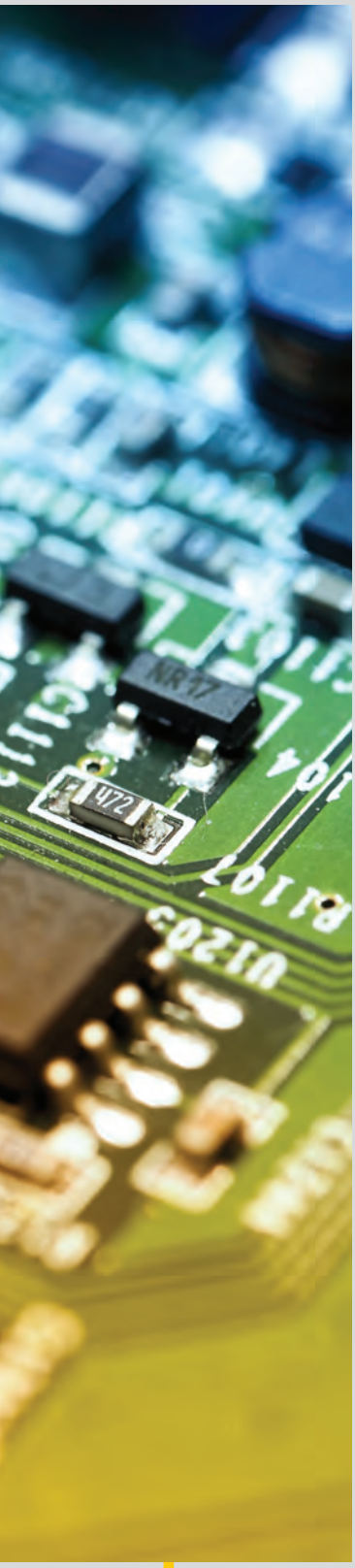


CONTENTS

XTS-I-23

Mobile X-Ray Truck Scanning System

Features	Description
Radiation Source	Linear Electron Accelerator 6/3 Mev (Dual Energy)
Detectors Type	Photodiode detector
Exclusion Area Size	38 m × 43 m
Maximum allowed speed for transportation of the system	90 km/h
Standard number of operators	2
Maximum received dose by cargo in each scan	10 µSv
Scan rate	30 – 40 vehicles per hour
Equipment's scan speed	0.2 – 0.4 m/s
Steel penetration	280 – 300 mm
Image definition evaluation functions	VARI MAT Zoom, VARI-B/W Zoom, Review, HIGH, LOW, Negative
Image display modes	Black/White image, Mat-Multi-Energy Method

Introduction to Mobile X-Ray Truck Scanning Systems

The Mobile X-ray truck scanning systems of our company are one of the most comprehensive cargo x-ray scanning systems in the market. Mobile X-ray truck scanning system design features drive-through and traveling portal modes. In drive-through mode, the system's scanning portal is stationary and the intended truck moves through the portal. Conversely, in traveling portal mode, the truck is still and the portal scans the cargo by traveling over the truck. In other words, the scanning portal is immobile and the truck is mobile in stationary mode; On the other hand, the portal is mobile and the truck is immobile in the mobile mode. By using X-ray transmission imaging, a complete picture of the truck and its cargo is crafted by the scan. This system is used for the detection of narcotics and contrabands at the borders.

Common Features of Mobile X-Ray Cargo Scanning Systems

- Detection of illegal articles planted inside the trucks and containers
- Identification of scanned articles inside trucks and containers
- Availability of two scan modes: drive-through and traveling portal modes
- The ability to stretch and retract the scanning arm by hydraulic cylinders
- Fast system set-up after relocation

• System power up by using either the household power supply or the system's diesel generator
• The ability to operate in various weather conditions
• Equipped with remote control for stretching and retracting the scanning arm
• Maximum allowed speed for transportation of the system: 90 km/h
• Advanced material classification of the articles utilizing DMD (Dual Energy Material Discrimination) technique
• Displaying the date and time of operating mode and the operator user code
• Automatic detection of high-density materials
• HI-Spot, Recall, SEN (Super Enhancement), IISS (Integrated Image Storing System)

GTS-I-21

Gamma-Ray Truck Scanning System

The gamma-ray truck scanning system manufactured by our industries with its accessories and software is one of the most comprehensive equipment compared to the similar gamma-ray inspection systems in the market. Our company offers this product in stationary and traveling gantry operation modes. A whole picture of the cargo and truck is produced using G-Ray (gamma-ray) imaging technology contained in this fixed equipment.

Features	Description
Gamma-ray source	Cobalt-60 with a half-life of 5.2713 years
Detectors type	Photodiode detector with 4.6 mm pixel size
Scan rate	10 to 20 trucks per hour
Number of Users	2
Scan speed	0.1 to 0.3 m/s
Maximum received dose by cargo in each scan	2 µSv
Steel penetration	180 – 200 mm

Gamma-Ray Truck Scanning System Features

• Detection of contrabands and illegal articles planted inside the containers
• Detection of narcotics and explosives
• Organic, inorganic materials discrimination in gamma-ray images
• Stationary and traveling gantry modes
• Real-time image display
• Displaying images in color, negative, gamma, local histogram, mirror … modes.
•Automatic number-plate recognition and container barcode reader
• Equipped with a dosimeter and environmental monitoring system
• Equipped with a video surveillance system

XTS-I-29

X-Ray Truck Scanning System

X-ray truck scanning system manufactured in our industries with its accessories and software is one of the most comprehensive equipment compared to the similar gamma-ray inspection systems in the market. This product features drive-through and traveling portal modes. In drive-through mode, the system's scanning portal is stationary and the intended truck moves through the portal. Conversely, in traveling portal mode, the truck is still and the portal scans the cargo by traveling over the truck.

X-Ray Truck Scanning System Features

- Dedicated user-friendly control panel
- Prompt inspection and subsequently smoother traffic flow compared to manual examination of the cargo
- Real-time high-resolution spectral color image for easy inspection
- Image recording and retrieving from the archives, scanning date, and time logging
- Connection to the container's code registration system
- Maximum received dose by cargo in each scan: 10 µSv
- Leakage radiation dose rate inside the operator's cabin: Same as the background
- Equipped with a dosimeter and environmental monitoring system
- Equipped with a video surveillance system
- Vehicle scanning speed of 5 km/h

Features	Description
Radiation source	Linear Electron Accelerator 6/3 Mev (Dual Energy)
Detector type	Photodiode detectors
Scan speed	Traveling portal mode: 0.2 – 0.4 m/s Drive-through mode: 5 km/h
Scan rate	Traveling portal mode: 30 vehicles/h Drive-through mode: 120 vehicles/h
Steel penetration	250 – 300 mm

XCS-I-18

X-Ray Cars Scanning System

XCS-I-22

X-Ray Cars Passengers-Out Scanning System

Carrying the car under the scanning portal by the conveyor without the need to driver 300 kV power generator

Fixed Truck X-Ray Scanning System (Gantry and Portable)

Product Description:

This truck and container scanning system uses x-ray and dual-energy output. It can be used to scan and detect objects placed up to 32 centimeters behind steel walls with different sizes and densities. This system was first presented on 7/23/2018 in the Bazargan border.

Note:

- Performance type: Gantry and crossing mode
- Scanning capacity: 30 (Gantry) / 120 (Crossing) per hour
- Energy: Dual
- Scanning depth: Up to 32 centimeters behind steel
- Featured with vehicle plaque number and container number detection: Yes
- Software: Local and network-based

Portal Truck Scanner

Product Description:

Portal truck scanner is used to investigate vehicles and luggage for radiant materials. It is also used to control the goods brought in and out of warehouses, special places and facilities, control illegal transportation of radioactive materials, control raw materials transported to metal melting facilities, and control pollution in operational settings. These scanners are equipped with detectors to detect gamma and neutron rays.

Technical Details:

- Standard two-column vehicle portal with a modular design
- For various light-weight and heavy vehicles (width 4.5 meters and height 5 meters)
- Water-proof and resistant against Iran's climate conditions
- Module's weight: 450 Kg (including lead and iron shield)
- Connects to a camera for taking photos of the vehicles passing the portal
- Designed according to ANSI N42.35-2004 standard

Mobile Truck and Container X-Ray Scanning System

Product Description:
The mobile X-ray scanning system for trucks and containers can be used to scan and detect objects placed up to 32 centimeters behind steel walls with different sizes and densities.

Technical Details:
- Performance type: Crossing mode
- Scanning capacity: 120 per hour
- Energy supply: Dual mode
- Scanning depth: Up to 32 centimeters behind steel
- Vehicle plaque number and container number detection: Yes

XNS-I-26

Relocatable X-Ray Cars Scanning System
Portable equipment, retractable ramp

The X-ray car scanning system prepares a clear image of the vehicle inside contents using dual-energy X-ray transmission imaging. These products are used for the detection of contrabands, illegal items, narcotics, explosives, and weapons planted in the vehicles. These systems are mainly used in places where threats arising from noncommercial vehicles are serious. This system comes in three distinct designs: without conveyor, with conveyor, and relocatable with retractable ramp, and all of them are equipped with a portal that scans the car while it is driving through or being carried through.

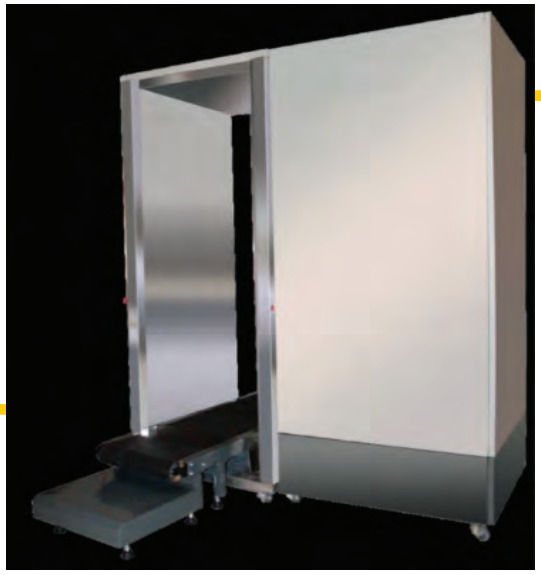
XFS-I-13

X-Ray Full Body Scanner

X-ray full-body scanners are used for the detection of objects concealed inside or attached to the individuals' bodies such as weapons, explosives, and narcotics. These scanners enjoy capable image processing software for the evaluation of complex multi-components images and detection of concealed objects and can make a significant contribution to the identification of suspected articles.

- The ability to detect concealed objects inside and outside of the body
- Date and time display, operation mode, and operator's user-code display
- Recall, IISS (Integrated Image Storing System)

Feature	Description
User panel	Dedicated, user-friendly, fast response
Display	Real-time images
Max. weight	Individual up to 200 kg
Operating cycle	100% and without the need to restart the system
Wire detectability	Min 0.1 mm thick wire
Radiation dose	Less than 2 µSv in each inspection in compliance with ANSI N43.17
X-ray generator	160 kV, 1.2 mA
X-ray Leakage	The leakage rate at the operator's location is the same as the background
Image evaluation functions	Zoom, Review, High, Low, Negative
Image display modes	Black / white image



Portal Body Scanner

Product Description:

The portal body scanner is used to check the people going in and out as well as luggage transported in terms of radiant materials, illegal radioactive materials, and control pollution at operational settings.

This scanner is equipped with detectors to detect gamma and neutron rays.

Technical Details:

- Type of detector: Scintillation plastic with dimensions of 180×60×600 cm
- Energy range: Detects gamma and neutron rays at a range of 60 Kev to 2 Mev
- Detection sensitivity at stop and count modes: µci1 from isotope 137cs – on the background of µsv /h 0/1
- Sensitivity detection in cross-through mode: uci5 from isotope 137cs – on the background of µsv /h 0/1
- Detection range for portal scanner: 1.8 meters
- Crossing speed: 1 m/s

X-Ray Security Baggage Scanner Model IAPX 100100

Product Description:

The X-ray security baggage scanner is used to detect dangerous materials like explosives and drugs at the country's ports of the entrance, various types of cold and warm weapons, and any kind of equipment that is forbidden to bring into specific places for specific reasons. Other applications include analyzing any kind of baggage, including passenger's luggage or postal packages for checking with the letters of declaration and control the equipment and parts brought out from agents.

General details:

- Proper size for passenger halls: length 3700 mm, width 1290 mm, and height 1780 mm
- The considerable size of the tunnel of the device: Height 1010 mm and width 1010 mm
- High capacity: It can load up to four 50 Kg packages at the same time
- Scanning depth: Up to 32 mm behind steel
- High sensitivity: About 1.4 micro Sievert
- Negligible radiation leak: Less than 3 micro Sievert per hour from 5 cm distance
- Wide range of working temperature: 5-40 degrees of centigrade (hall temperature)
- Wide range of humidity tolerance: 10-90%
- Works with 220v (50 Hz) and 110v (60 Hz) electricity without prior adjustment

Technical Details:

- X-ray generator tube: With Anode-Cathode voltage of 160 Kw and 0.6 milliampere
- Radiation direction: From above and corner
- Cooling system
- Ray specifications: 80 degrees with a width of 2 millimeters
- Detection: Organizing photodiode detector elements in the form of L
- Strap speed: 0.2 meters per second
- Strap height: 30 cm
- Conveyer strap type: bidirectional and single-engine
- Generator setup system with automatic diagnosis
- Displays images with 10 colors
- Bimodal monitor: B/W and RGB
- Saves up to 10,000 scanned images

Applications

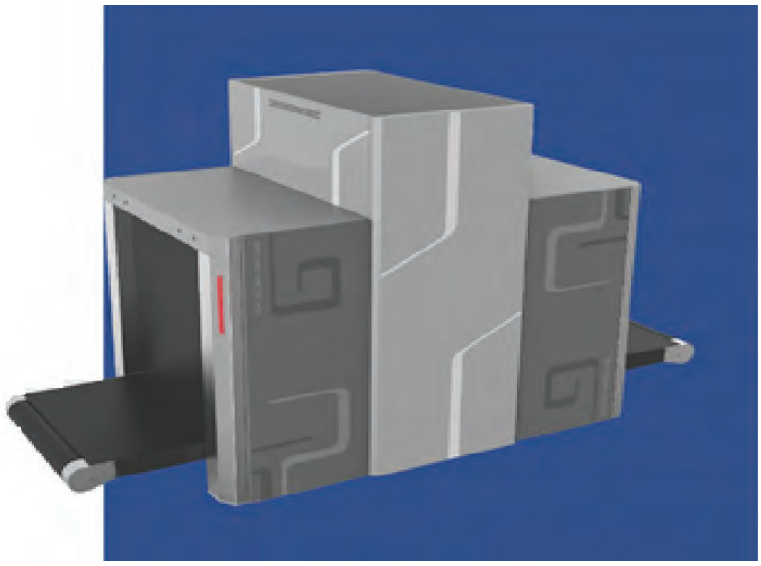
- Detecting dangerous materials like explosives
- Detecting drugs at the country's points of entry
- Detecting warm and cold weapons
- Controlling the equipment brought in and out factories
- Controlling any kind of equipment which is forbidden to bring into specific places for specific reasons
- Analyzing any kind of baggage, including passenger's luggage or postal packages to check them with the letters of declaration
- Preventing from smuggling goods

XBS-I-16

100×100 X-Ray Baggage and Air Cargo Screening System

XBS-I-16 is mainly used to detect illegal articles such as weapons, explosives, narcotics, etc. that are concealed inside the baggage or cargo using X-ray technology. This system is an advanced first-rate inspection unit with a light-weight and compact design. This system offers quick and simple procedures of scanning, inspection, viewing, and analyzing the scanned image of the baggage in the shortest possible time. Products' being user-friendly and rapid interface has boosted the throughput of security inspections and cut back the costs and labor associated with the operation.

This inspection unit is used at checkpoints in sensitive places like airports, customs...



- Advanced material discrimination by DMD (Dual Energy Material Discrimination) technique
- Date and time display of operational mode
- Automatic detection of high-density articles
- HI-Spot, Recall, SEN (Super Enhancement), IISS (Integrated Image Storing System)

Features	Description
Tunnel dimensions	Width: 1050 mm, Height: 1050 mm
Maximum cargo dimensions	Width: 1000 mm, Height: 1000 mm
Conveyor speed	0.2 m/s
Maximum cargo/baggage weight	200 kg
Wire detectability	Min 0.1 mm thick wire
Steel penetration	27 mm
Operating cycle	100%
Radiation dose in each inspection	1 µSv
X-ray leakage	The leakage rate at the operator's location is the same as the background
Image evaluation functions	Organic Only (O2), Organic Stripping (OS), VARI MAT Zoom, VARI B/W Zoom, Review, High, Low, Negative
Image display modes	Black/White image, Mat-Multi-Energy Method

XBS-I-14

75×55 X-Ray Baggage and Air Cargo Screening System

XBS-I-14 is mainly used to detect illegal articles such as weapons, explosives, narcotics, etc. that are concealed inside the baggage or cargo using X-ray technology. This system is an advanced first-rate inspection unit with a light-weight and compact design. This system offers quick and simple procedures of scanning, inspection, viewing, and analyzing the scanned image of the baggage in the shortest possible time. Products' user friendly and rapid interface has boosted the throughput of security inspections and cut back the costs and labor associated with the operation. This inspection unit is used at checkpoints of sensitive places like airports, customs, trade fairs, gathering places …

- Advanced material discrimination by DMD (Dual Energy Material Discrimination) technique
- Date and time display of operational mode
- Automatic detection of high-density articles
- HI-Spot, Recall, SEN (Super Enhancement), IISS (Integrated Image Storing System)

Features	Description
Tunnel dimensions	Width: 760 mm, Height: 560 mm
Maximum cargo dimensions	Width: 750 mm, Height: 550 mm
Conveyor speed	0.2 m/s
Maximum cargo/baggage weight	160 kg
Wire detectability	Min 0.1 mm thick wire
Steel penetration	27 mm
Operating cycle	100%
Radiation dose in each inspection	1 µSv
X-ray leakage	The leakage rate at the operator's location is the same as the background
Image evaluation functions	Organic Only (O2), Organic Stripping (OS), VARI MAT Zoom, VARI B/W Zoom, Review, High, Low, Negative
Image display modes	Black/White image, Mat-Multi-Energy Method

XBS-I-7

60×40 X-Ray Baggage and Air Cargo Screening System

XBS-I-7 is mainly used to detect illegal articles such as weapons, explosives, narcotics, etc. that are concealed inside the baggage or cargo using X-ray technology. This system is an advanced first-rate inspection unit with a light-weight and compact design. This system offers quick and simple procedures of scanning, inspection, viewing, and analyzing the scanned image of the baggage in the shortest possible time. The product's user-friendly and rapid interface has boosted the throughput of security inspections and cut back the costs and labor associated with the operation. This inspection unit is used at checkpoints of sensitive places like airports, customs, trade fairs, gathering places …

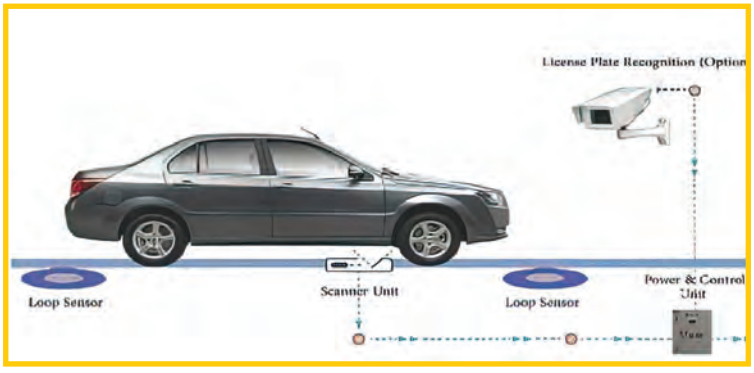
- Advanced material discrimination by DMD (Dual Energy Material Discrimination) technique
- Date and time display of operational mode
- Automatic detection of high-density articles
- HI-Spot, Recall, SEN (Super Enhancement), IISS (Integrated Image Storing System)

Features	Description
Tunnel dimensions	Width: 620 mm, Height: 410 mm
Maximum cargo dimensions	Width: 600 mm, Height: 400 mm
Conveyor speed	0.2 m/s
Maximum cargo/baggage weight	160 kg
Wire detectability	Min 0.1 mm thick wire
Steel penetration	27 mm
Operating cycle	100%
Radiation dose in each inspection	1 µSv
X-ray leakage	The leakage rate at the operator's location is the same as the background
Image evaluation functions	Organic Only (O2), Organic Stripping (OS), VARI MAT Zoom, VARI B/W Zoom, Review, High, Low, Negative
Image display modes	Black/White Image, Mat-Multi-Energy Method

Under-Vehicle Scanning System

Providing for the security of important and strategic places usually require extra security measures including under vehicle scanning to ward off terrorist attacks and carrying of illegal items such as weapons, explosives, contrabands, etc. To accomplish this inspection our industries have manufactured an advanced under vehicle scanning unit that displays the underside of the inspected vehicles by a special imaging camera and processes their image.

Features
Immediate inspection of the vehicles and subsequently smoother traffic flow compared to manual inspection
High-resolution composite, real-time color image for enhanced analysis
Offered in portable and fixed models
Portable: contains a portable ramp that obviates the need to alter the road surface
Fixed: installed beneath the road surface and offers inconspicuous scanning
Saves images and retrieves them from the archives, logging the inspection time
Can be connected to an automatic number-plate recognition system to record plate number alongside the driver's and vehicle's photo
Comparing the current image of the revisiting vehicles with the previous one and alarming the user in case of any detected change
Barrier connectivity and control

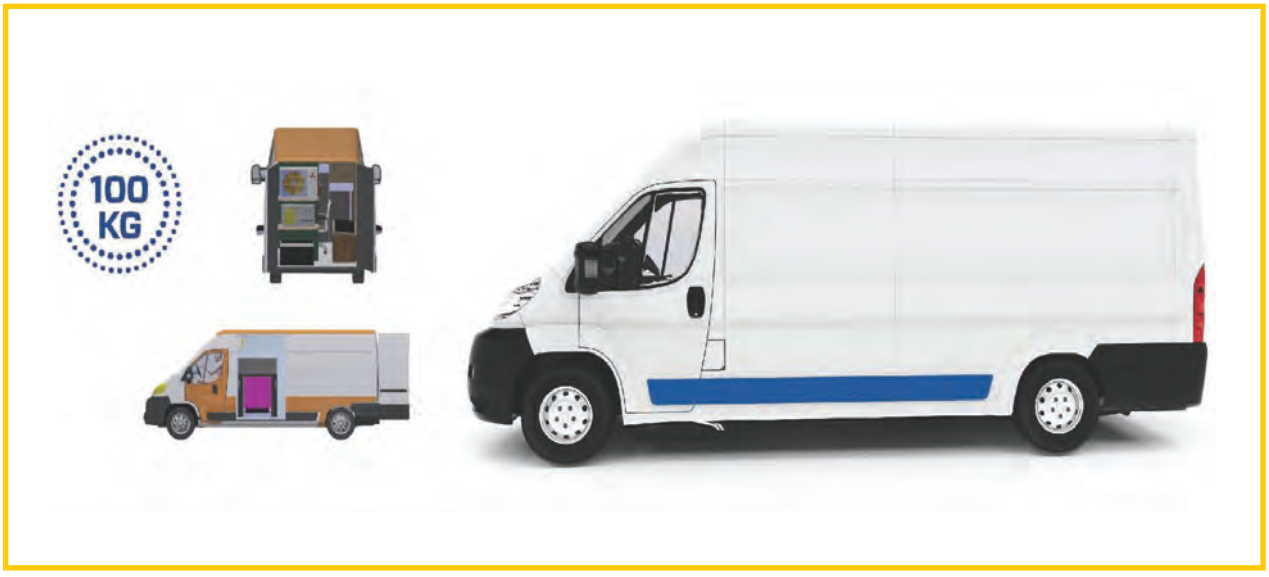


PXS-I-25

Portable X-Ray Scanning System

Portable X-ray scanning equipment is used by security personnel and bomb disposal squads for the detection of illegal objects, explosives, and concealed items inside small packages and abandoned bags. PXS I 25 is a compact, sturdy, lightweight equipment with advanced capabilities. The X-ray generator is placed on one side of the intended object and the detectors are placed on the opposite side as panels. In this way, a complete image of the package or bag is generated that is used for further analysis.

Features	Description
Detector type	Linear array with scintillator
Communications	Cable, wireless
Operating temperature	-10°C to +40°C
Scan area dimensions	460 mm × 600 mm
Battery type	Rechargeable lithium
Scan time	7 sec
X-ray source	Generator
Generator operating voltage	80 to 120 kV
Steel penetration	30 mm
Wire detectability	Min 0.1 mm thick wire



Single-Element TLD Reader Model 7103

Product Description:

This device is used to measure the absorbed dose in TLD pellets and powder. The TLD reader is equipped with a simple drawer as well as a platinum plate. The powder or pellet is placed on a platinum plate which is called planchet. The device measures the light reflected from the powder or pellet by applying an adjustable heating profile to the pellets employing PMT and relevant electronic circuits. The radiated light can be used to calculate the dose absorbed by the element. TLD reader 7103 can be used in medical physics, health physics, material research, and food radiology. It can also be used for industrial and research applications.

Technical Details:

Equipped with isotope reference light for optical calibration of the device
Various heating profiles with adjustable slopes from 1 to 40 degrees per second
Equipped with Visual software application with various features including drawing heating profiles, drawing luminosity curve, generating output in NC, saving the data read with date and time, etc.
Total linear functionality
Repeatability: 2 percent fluctuation based on the standard deviation for 10 doses measured, from 1 milliard to 10 milliards with Cs 137
Much reasonable price compared to the American and European counterparts Repairing, maintaining and online support by our experts
Making changes to the software and hardware based on the users' needs
No need for any special conditions for installation

Applications
Measuring radiation dose on skin
Measuring critical organs dose
Studying determined dose
Environmental dose
Testing radiated food items
Studying radioactive materials
Analyzing the received dose of electronic parts
Measuring environmental dose in radiography
Analyzing the radiation dose of the whole body
Measuring the CT Scan dose to ensure its quality

Kashef

Product Description:

The reflective X-ray imaging system is used to detect explosive materials and drugs behind the body of vehicles. In the reflective X-ray imaging method, the object moves next to the imaging system and the whole object is scanned by narrow, movable X-rays. The reflected X rays are detected by two big detectors. The signal of these detectors are processed by a central control unit and the image is shaped like the object moves.

Technical Details:

- Scanning speed: 0.5/1.5/3/5 Km/h. Faster speeds can be provided based on the customer's request up to 12 Km/h.
- Detection ability: Detection of explosive materials, drugs, and minerals is a special feature of Kashef-1.
- Spatial distinguishing power: 15 mm at a relative speed of 1.5 Km/h and from a distance of 1.5 meters from the vehicle's body
- Penetration depth: 6 mm of steel at a relative speed of 1.5 Km/h and from a distance of 1.5 meters from the vehicle's body
- Cable detection: AWG10 cable at a relative speed of 1.5 Km/h and from a distance of 1.5 meters from the vehicle's body
- Image processing feature to enhance the quality of images
- It can be used in two styles: movable and fixed

The system can store up to 20,000 images in its memory to review and check the information Kashef-1 meets the requirements of the ANSI standard N 43.17-2002.

- The imposed dose is less than the radiation limitation based on the ANSI standard for incidents wherein a person is hidden in the container.
- Temperature range to use: -20 degrees centigrade to 50 degrees centigrade

Maximum humidity to use: 98%

TLD Reader

Product Description:

TLD Reader model 7200 is designed and created to read 6600-HARSHAW TLD cards. This device makes the visible spectrum reflect from its surface by heating TLD elements and shows the absorbed spectrum by measuring it. This device is designed to read about 150 cards in each loading, to save their information, and to print that information using the embedded computer. TLD reader model 7200 is compatible with Windows XP, 7, and 8. It has several setting boxes for heating and reading Harshaw's four-element cards.

Technical Details:

- Working domain: Submitting and saving the absorbed dose by an individual at the range of 10 µSv-30 Sv
- Working capacity and throughput: 150 four-element cards at each time and a throughput of 60 four-element cards per hour (Lif: Mg, Ti element at standard temperature)
- Preparation time: Less than 20 minutes

Working temperature and humidity: Up to 40 degrees of centigrade and less than 95% humidity at the temperature of 25 degrees of centigrade

- Weight: 70 Kg

Gamma and X-Ray Dosimeter GXD 7014

Product Description:

The dosimeter model GXD 7014 is used to measure the pollution resulted from gamma and X rays. In GXD 7014, the G-M detector with internal compensation is used, which can be used by an individual.

Technical Details:

- Detectors: Two Geiger-Muller detectors
- Response energy range: 80 keV to 3 MeV
- Gamma dose rate measurement range: $10\frac{mSv}{h}$ to $0.1\frac{\mu Sv}{h}$
- Cumulative gamma dose measurement rate: $10\,Sv$ to $0.1\mu Sv$
- Response time: At the range of $0.1\frac{\mu Sv}{h}$ to $1\frac{\mu Sv}{h}$: less than 20 seconds
- At the range of $1\frac{\mu Sv}{h}$ to $10\frac{mSv}{h}$: less than 10 seconds
- At the range above $10\frac{mSv}{h}$: less than 2 seconds
- C. Dose display units $\frac{\mu R}{h}, \frac{mR}{h}, \frac{R}{h}, \frac{\mu Sv}{h}, \frac{mSv}{h}, \frac{Sv}{h}$
- Dose cumulative units: $\mu R, mR, R, \mu Sv, mSv, Sv$

Portable Gamma Spectrometer RID-3611

Product Description:
Portable gamma spectrometer RID-3611 can analyze the gamma spectrum reflected from natural and artificial sources of gamma and detect the type of radioisotope. Thanks to its spectrometry feature, accurate dosimetry can also be done with this device. This system can be used in laboratory activities, exploring mines, nuclear incidents, etc.

1) Detector details
NaI with the size of (2"×2")

2)System spectrometry details
Number of channels: 4096
ADC Accuracy: 12 bits
Energy range: 20 Kev to 3 MeV
Maximum counting of each channel: 65535
Automatic calibration
Location tagging (GPS)

3)System dosimetry details:
Sampling time: 1-60 seconds
Measuring unit: Sievert
Measurable dose rate range: 100 nSv/h to 10μSv/h

Selecting the alarm level of dose rate and dose
Displaying temporal changes of the dose rate and cps updated every 1 second
Displaying ten-second rate updated every 1 second

4) System radionuclide library
Natural, medical and industrial radionuclide library
New libraries can be added by the user

5) Saving data
It can save 500 separate spectrums, 40,000 samples including dose, location, date and time
It can transfer the spectrum to the external memory

6) Communication ports
Equipped with USB ports

7) User interface
Uses a 4.3" LCD
Shows gamma spectrum
Peaking and showing a list of radionuclides while doing spectrometry

8)Reporting spectrum analysis It can move the spectrum to PC

9) Power supply
System consumable current: 0.8 A
Maximum working time with battery: 6 hours

10) Physical details
Weight: 3 Kg

11) Standard accessories
A charger to connect to 220v utility power
Charger connector for car lighter
Calibration source: 0.25 micro Ci cesium 137
User manual

Real-Time Alarm System EW-8010

Product Description:

Ensuring the safety of public places for the sake of protecting the staff and people, future generations and the environment is a matter of fact. Installing a real-time alarm and environmental radiation monitoring system can immensely help with achieving this goal.

Currently, 137 countries use gamma and X-ray radiation measurement stations. These stations can detect any change of the environmental gamma immediately. Installing this system would help with getting to know about these incidents and take proper actions when needed.

Such kind of systems is used in some countries. For example, EU countries use an integrated system to monitor environmental radiation.

1. Data logger details

- Colorful monitor to show daily values
- Exclusive software application to send the saved data within the periods specified in the software
- 8 dosimeter probes can be connected (it can be increased based on customer's request)
- Dosimeter probe distance to data logger: Up to 50 meters (it can be increased based on customer's request)
- Audial and visual alarm to show any dose above the limitation determined

2. Dosimetry

- Measurable radiation: Gamma and X-ray
- Detector type: Two GM detectors with internal compensation of Centronic company from the UK
- Dosimetry range: 1 mSv/h to 100 nSv/h
- Energy range: 80 Kev –3 Mev
- Measurement accuracy: Less than ±10%
- Dosimetry probe calibration with software

Real-Time Warning System

Product Description:

The real-time warning system is created in collaboration with the Iranian Meteorological Organization. The meteorological information can not only help with detecting incident occurrence but also with detecting radiant materials spreading in the country. Besides, this system can immensely help with studies on environmental gamma rays and the impact of natural radiation.

Technical Details:

- Measurable radiation: gamma and x rays
- Dosimetry range: 30 nSv/h up to a minimum of 1000 mSv/h
- Energy range: From 50 Kev to 3 Mev
- Test standard: The International standard IEC-60846 requirements
- Communication channels for sending the data to the central server: GPRS, Telephone line,

Explosives and Drugs Detector

General details:

• Application: Military and Commercial
• Detection technology: Ion-mobility spectrometry
• Movability: Fixed at stop and search points
• Customers: Law enforcement forces, military forces, security forces, and laboratories Description: Ion-mobility spectrometry at high temperature is the basis of this device, which has a high-level separation and sensitivity. It can be used to directly analyze the absorbed samples on the false surface. The samples collected can be used with extraction methods and sample vapors.

Functional details:

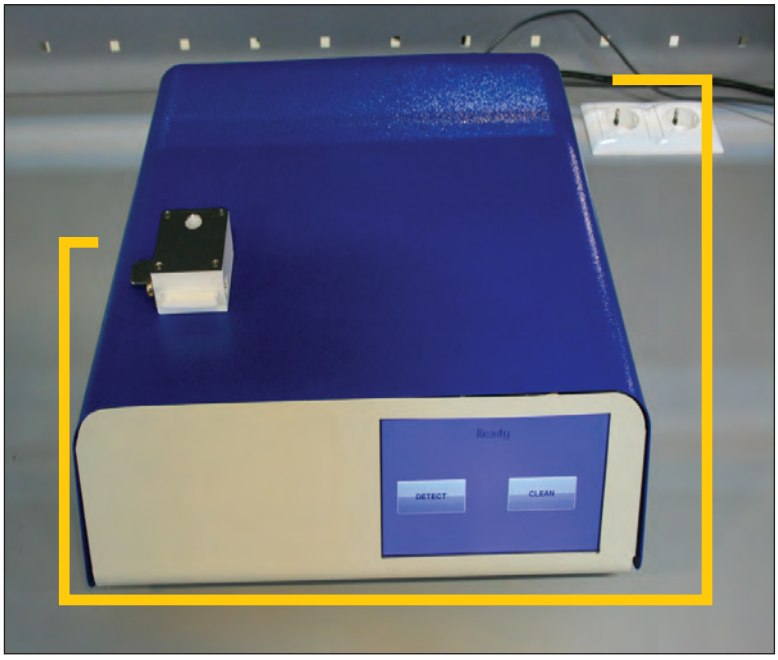
• Detectable explosives:
TNT (ng), RDX (ng), PETN (ng), HMX (ng), DPA (ng), C4(direct injection ≤µg), NG (direct injection ≤µg),
• Detectable drugs:
Cocaine (direct injection) ≤µg new psychoactive, opium (direct injection ≥µg), methadone (µg), methamphetamine (µg), heroine (µg), morphine (direct injection≥µg), crack (direct injection ≤µg)
Sensitivity: About a Nano-gram in most cases
• Selectivity: Depends on the detection criteria. Usually, it is very high.
• Start time: In less than 15 minutes
• Restart time: Less than 30 minutes
• Response time: Less than 10 seconds
• Detectable physical states: vapor, liquid, and solid
• Alarming system: Audial and visual

Physical specifications:

• Size: 15x37x40 cm
• Weight: 10 Kg
• Power supply: 220 Utility power 50~60 Hz 200W
• Ionization source: 63Ni

Accessories:

• User manual and maintenance manual
• Simulant
• DuPont
• Humidity and activated carbon absorber



EAGLE-A Airport V/UHF Direction Finder VRF-091

General Description

The EAGLE-C is designed to find the direction of signals in 110-400 MHZ. The system includes a compact receiver that can be used in operations and tactical applications. Both the processing module and receiver module are placed inside the antenna and the processed information is transmitted to the server only by one network cable. The setup time of the system is very short and the system antenna is designed to be folded. The system can demodulate FM and AM signals with 1 to 250 kHz bandwidths. The system includes an auto-intercept mechanism in which it monitors and saves automatically the parameters of various received signals. The sensitivity and stability are qualified based on the standards and it works with the correlation interferometer algorithm to find the direction of signals. The receiver bandwidth is 10MHz and it can find the direction of the wideband signals whose frequencies are 10MHz or less than 10MHz bandwidth. Direction Finding in the airport is the most effective application for EAGLE-A.

Features

- Detection of analog and digital fixed frequency sources.
- Production and integration facilities
- Correlative interferometry algorithm
- 9• element array along with two• channel receiver structure
- Detecting airborne and ground• base communication
- Narrowband and wideband modes
- Detection of weak signal utilizing an average algorithm
- The speed of DF sweep is about 2000CH/sec
- Full band DF accuracy is better than 2°RMS
- Reporting, saving, filing, and recording the information
- Close channel recognition and direction• finding
- The System is tactical and installation time is less than 30 minutes
- Manual gain control
- Remote control
- Immediate selection and processing of signals
- Various features in spectrum plot (averaging, video resolutions, bandwidth resolution)

Technical Specifications:	
Description	Range
Frequency Range	110~400 MHz
Instantaneous Bandwidth	5 kHz
Frequency Accuracy	1 ppm
Phase Noise	-95 dBc /Hz @ 10KHz Offset
Third-Order Intercept (TOI)/O	output ≥ 17dBm, type. 30dBm
Noise Figure	10dB
Array Element Types	9 Element Fan Array
Polarization	Vertical
DF Method	Correlative Interferometry
AOA Accuracy	0.5°RMS
Display	Azimuth vs. Frequency, Level vs. Frequency, Polar Diagram, Histogram, Waterfall, IF Panoramic Display
Display Resolution	1°
DF Sensitivity	0.5 to 12μV/m
Operating Modes	FFM (Fix Frequency Mode), WBM (Wide Band Mode), Search, Scan
Scan Speed with 20 kHz Reslution	3GHz/Sec
Demodulation Bandwidths	5 to 250 kHz
Adjacent Channel Suppressio	n @ 500 KHz 70dB
Modes of Demodulation	AM, FM
Dynamic Range	> 70dB
Antenna	
Frequency Range	110 to 1200MHz
Antenna Type	9-Element Circular Array
Polarization	Vertical
Nominal Impedance	50Ω
DF Error (In Reflection Free Environ ent)	≤2°rms
Dimension (Diameter, Height)	1.1 x 0.26meter
Weight	about 55kg
Environmental Conditions	
Environmental Test Standard	According to Mil-STD-810G
Operation Temperature Range (Indoor)	0°C to 50°C
Operation Temperature Range (Outdoor)	-25°C to +65°C
MTBF MTTR	12VDC, 220VAC,20W
Dimensions (W x H x D) Weight	2000hours
ITU-R Recommendation Compliant	20 minutes
MTBF MTTR	86 x 56 x 40cm (without antenna)
Dimensions (W x H x D) Weight	about 75kg (without antenna)
ITU-R Recommendation Compliant	Used Both AC and DC, Portable Battery Pack for 24 Hours SM. 1053, SM. 1269, SM. 1370, SM. 1392, SM. 0-1537, SM. 1-1537,SM. 1598, SM. 0-1600, SM.2-1600, SM.1-854, SM.3-854

EAGLE-E V/UHF Direction Finder VRF-141

General Description

The high scan speed is one of the most important features in the EAGLE-E which is developed based on the state-of-the-art. This system can intercept and find the direction of frequency/time-hopping, burst, and fixed frequency signals in the wide frequency range from 30MHz to 3000MHz. This system uses a correlative interferometry algorithm. The antennas are designed for use in stationary and semi-tactical applications. Utilizing large aperture antennas with nine elements, the system can reach high accurate bearings. For better accuracy achievement DF should consist of three antenna sets, which are arranged for three-sub band frequency. One set of nine elements antenna covers 30-200MHz frequency band, the second set of nine elements antenna covers 30-1300MHz and the last set of eight elements antenna covers 1300-3000MHz frequency band. EAGLE-E is protected against lightning that prevents it from natural malfunctions.

Features

- High• speed direction finding, applying correlative interferometer algorithm
- Simultaneous direction finding of wideband (FH/Burst) and narrowband signals
- Shielded against powerful signals
- Appropriate diversity of antennas to cover the frequency band
- Enhanced DF accuracy and sensitivity by using wide aperture DF antennas
- Extremely high-frequency resolution
- Direction finding of all narrowband digital and analog modulated signals
- Simultaneous direction finding of three frequency-hopping signals with 2500hops/S in 20MHz bandwidth
- Networking capability for position finding
- Direction finding of the burst signals with a time duration of more than 400μsec.
- Equipped whit GPS receiver for time synchronization
- Automatically correct the error difference angle concerning magnetic north by compass
- Demodulation of the AM and FM signals.
- Self-test ability with the error and its fault status determination
- Capability to show a map in vector or raster shape in infinitive multi-layer
- User-Friendly GUI
- Appropriate weight & dimensions
- Tactical & stationary application
- Able to arrange any DF system on the map
- Possibility to add or delete layers on the map
- Printing ability
- Scale indicating

Technical Specifications:	
Description	Range
Frequency Range	30-3000MHz
Instantaneous Bandwidth	20MHz (Expandable to 80MHz)
Frequency Resolution	100Hz
Frequency Accuracy	1ppm
Phase Noise	-105dBc/Hz @10KHz
Image Frequency Rejection	≥ 80dB
Noise Figure	≤16dB
Adjacent Channel Suppression 10 KHz	80dB
Modes of Demodulation	AM, FM
Dynamic Range	≥ 120dB Offline (Including AGC) ≥ 70dB Online
DF Method	Correlative Interferometer, Music (option)
Instrument DF Accuracy	1° RMS
System DF accuracy	Dependent to Antenna Type (Refer to Antenna Spec.)
Display	Azimuth vs. Frequency, Level vs. Frequency, Polar Diagram, Histogram, Waterfall, Real-Time IF Panoramic Display
Display Resolution	1°
DF Sensitivity	Typ. 1µv/m (-107dBm) to 9µv/m (-90dBm) (Frequency Dependent)

Operating Modes	FFM (Fix Frequency Mode), WBM (Wide Band Mode), SCAN (F-SCAN, M-SCAN), Frequency Hopping (up to 3 nets) with 2500hops/s
Frequency Span in Wideband Mode	1MHz/ 2MHz/10MHz/20MHz
Minimum Detectable Burst Duration	400µs
Scan Speed	Up to 1GHz/sec with 20KHz Resolution
Channel Spacing (Depending on Selected Real Time Bandwidths)	100 KHz/50 KHz/25 KHz/20KHz 12.5KHz/10 KHz/8.33KHz/5KHz 2 KHz/1 KHz/0.5KHz/0.2KHz
Direction Finding Bandwidths	0.1KHz/0.05 KHz/0.02KHz 60KHz/30KHz/15KHz/12KHz/7.5KHz/6KHz/5KHz/3KHz/1.2K Hz/0.6KHz
Demodulation Bandwidths	600Hz, 1KHz, 1.2KHz, 5KHz, 7.5KHz, 12KHz, 15KHz, 30KHz, 60KHz, 150KHz
Azimuth Range	360°
Maximum Detectable Hopping Rate	2500Hop/s (Expandable to 5000Hop/s)

EAGLE-E	A	C
Frequency Range	30 to 1300MHz	1300 to 3000MHz
Antenna Type	9-Element Circular Array	8-Element Circular Array
Polarization	Vertical	Vertical
Nom. Impedance	50Ω	50Ω
DF Error (In Reflection Free Environment)	≤2.5°rms, 30 to ≤2°rms 200MHz	≤1.5°rms, 200 to 1300MHz
Dimension (Diameter, Height)	1.1 x .26meter	0.31 x 0.5meter
Weight	about 30kg	about 20kg

Environmental Conditions	
Environmental Test Standard	According to Mil-STD-810G
Operation Temperature Range (Indoor)	0°C to 50°C
Operation Temperature Range (Outdoor)	-25°C to +65°C
MTBF	2000hours
MTTR	20minutes
Dimensions (W x H x D)	Approx. 60 x 70 x 70cm
Weight	Approx. 65kg
Power supply	220VAC, Maximum 1.5KVA
ITU-R Recommendation Compliant	SM.2125, SM.854, SM.1836,SM.1837,SM.1838,SM.1840

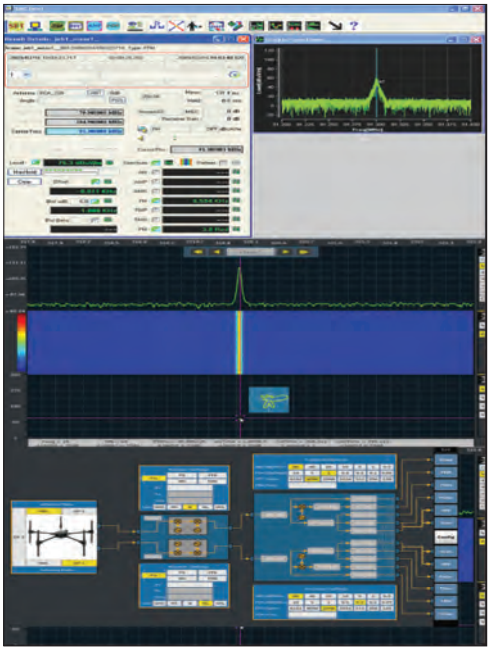
EAGLE-M Manpack Direction Finder PRF-141

General Description

EAGLE-M is designed to find the direction of signals in 30~6000 MHz. EAGLE-M includes Antenna, tuner, process, and supply units which are installed inside a portable case. The software is installed on a military tablet which is used by the operator. The tablet is connected to hardware modules by Wi-Fi or CAT-6 cable. Three antennas cover all frequency bands. SA1007 is designed in 30-1300 MHz and uses the Watson watt direction-finding method for frequency bellow 173MHz and correlative interferometer for other frequency bands. SA2007 is another DF antenna that covers 690-6000MHz and uses a correlative interferometer method. SA3007 is a folded DF antenna that can be used in the 30-690MHz frequency band and for more accurate direction finding in its band. Two RF switch commutates signals from the DF and monitoring elements to the down-converter and then to the multi-channel DF/Monitoring receiver.

Features

- Wide frequency range
- Lightweight system with compact antenna suitable for portable application
- Direction finding on the move
- Fast wideband receiver with panorama scan for fast scanning of wide frequency ranges.
- High-precision correlative interferometer DF method
- Compact, lightweight battery pack for two hours of operation
- Network capability for position finding purpose
- Illustration of direction-finding results on the map



Technical Specifications:	
Description	Range
Frequency range	30 to 6000 MHz (DF), 100 to 6000 MHz (monitoring) IF
Bandwidth	80 MHz
DF Sensitivity	Depends on DF Antenna (i.e. SA2007 or SA3007) for 5˚ RMS DF fluctuation, 5 s 20 MHz to 50 MHz: Typ. 2 µV/m to 8µV/m 50 MHz to 3 GHz: Typ. 1 µV/m 3 GHz to 6 GHz: Typ. 2 µV/m to 8µV/m
User System Connection	Wi-Fi, LAN
DF Method	Correlative Interferometer (higher than 173 MHz), Watson Watt (lower than 173 MHz)
System DF Accuracy	2° RMS (in the reflection-free environment)
Display	Azimuth vs. frequency, level vs. frequency, polar diagram, histogram, waterfall, real-time IF panoramic display (Bandwidth 100 kHz or 1 MHz)
Display Resolution	1° To 5° (selectable)
Operating Modes	FFM (Fix Frequency Mode), WBM (Wide Band Mode), SCAN (F-SCAN, M-SCAN)
Minimum burst duration (for multiple burst signals)	0.5 Msec
Scan Speed	Up to 2 GHz/sec
Demodulation Bandwidths	Up to 150 kHz
Modes of Demodulation	CW, AM, FM, SSB, LSB, USB

Dynamic Range (incl. AGC)	≥ 120 dB Map		
Display	Offline mode		
Frequency Span in Wideband Mode	1 MHz / 2 MHz/ 4MHz/ 10 MHz		
Frequency Resolution	60 KHz/ 30KHz// 15 KHz/ 12KHz/ 7.5 KHz/ 6KHz/ 5 KHz/ 3 KHz/ 1/2 KHz/ 0.6 Hz		
Antenna	SA1007	SA2007	SA3007
Frequency Range	20~1300MHz	690 MHz~ 6GHz	690~20 MHz
Array Configuration	1x8 Elements + loop ferrite 690 ~ 2900 MHz 1x8 Elements 2900~6000 MHz 1x8 Elements (Interferometry Method) 1x5 Elements circular array		
Antenna Type	Directive active Antenna Passive Dipole Antenna Active dipole		
Polarization	vertical	vertical	vertical
Weight	approx. 6 kg	approx. 6 kg	approx. 6 kg
Dimension	Diameter: approx. 330 mm Height: approx. 270 mm Diameter: approx. 330 mm Height: approx. 270 mm In operation: Diameter: approx. 1060 mm Height: approx. 520 mm Collapsed: Diameter: approx. 310 mm Height: approx. 535 mm		
Environmental Conditions			
Environmental Test Standard	According to Mil-STD-810G		
Operation temperature range (indoor)	0°C to 50°C		
Operation temperature range (outdoor)	-25°C to +65° C		
Storage Temperature range	-30°C to +70° C		
Humidity	80% in 40°C for indoor parts 95% in 40°C for outdoor parts		
Weight	Approx. 10 Kg		
Battery pack operating time per charge	Approx. 2 hours		

EAGLE-ITU ITU-Based Direction Finder VRF-101

General Description

The wideband direction finder offers outstanding real-time bandwidth and DF scan speed as well as high DF accuracy, sensitivity, and reliable output against the reflected signal. Due to the integrated super-resolution DF method, the direction finder is ideal for co-channel signals. The system operates with multichannel DF antennas. The multichannel DF antennas have a large number of antenna elements and therefore offer a very wide aperture and exceptionally high performance. For the fast, automatic location of frequency-agile signals, multiple direction finders can be combined and operated in synchronized DF scan mode in conjunction with an optional, automatic pre-classifier. The system complies with all ITU recommendations. Because of the lightweight antenna and low power, the system is ideal for mobile applications.

Features

- Direction finding of extremely fast frequency agile signals
- Higher immunity to reflections due to DF antennas with a very large number of antenna elements
- Direction finding for co-channel signals (super-resolution method)
- Precise direction finding of weak and strong signals
- Accurate and reliable location of short-duration signals
- Compliance with all ITU recommendations for direction finders and receivers
- Signal processing at a maximum speed based on powerful FPGAs

Technical Specifications:	
Description	Range
Frequency	30~ 6000 MHz
Instantaneous Bandwidth (IF BW)	1, 2, 20, 40 MHz, compliance with ITU-R SM. 1836
Frequency accuracy	0.1 ppm (0.01 ppm with external reference)
Sensitivity (measurement with telephone filter acc. To CITT Normal mode). Compliance with ITU-R SM.1840	
AM: BW = 6 kHz, SINAD = 10 dB fmod = 1 kHz,m = .5	≤1 µV, f ≤ 2000 MHz ≤1.4 µV f = 2000 MHz to 3000 MHz
FM: BW = 15 kHz, SINAD = 20 dB, fmod = 1kHz, Deviation = 5 kHz	≤1.8µV, (≤–102 dBm),3000MHz≤ f ≤ 6000 MHz ≤1 µV, (≤–107 dBm), f ≤ 2000 MHz ≤1.4 µV, (≤–104 dBm), f = 2000 MHz to 3000 MHz ≤1.8µV, (≤–102 dBm),f= 3000MHz to 6000 MHz
DF Method	Correlative Interferometer, super-resolution
Instrument DF Accuracy	1° RMS
System DF accuracy	≤ 2 RMS In a reflection-free environment, In line with report ITU-R SM. 2125 and ITU-R SM.854
Display Resolution	1°
DF Sensitivity	Typical 3µv/m to 20 µv/m, frequency-dependent 2 s integration time and 600 Hz (VHF/UHF/SHF) DF bandwidth in line with report ITU-R SM. 2125
Operating Modes	FFM (Fixed Frequency Mode), WFFM (Wide Band Mode), SCAN (F-SCAN, M-SCAN),
Frequency Hopping detection and DF	Max. 3 simultaneous hopping signals with 2500 hop/s
Minimum burst duration	400 µs (multiple burst signals) 1 ms (single burst signal)
Scan Speed	1 GHz/sec
Direction Finding Bandwidth	400 Hz to 800 kHz about selectable 40 values (Depends on IF BW)
Demodulation Bandwidths	150, 60, 30, 15, 12, 7, 5, 1, 1.2, 0.6 kHz
Demodulator	AM, FM
Antenna	
SA 307	30 to 900 MHz, Vertical, -9 element circular array,14Kg
SA 207	900 to 6000 MHz, Vertical, 8-element circular array, 8Kg
Environmental Conditions	
Operation temperature range (indoor)	0° C to 50° C
Operation temperature range (outdoor)	-25°C to +60° C
Humidity	80% in 40°C for indoor parts, 95% in 40° C for outdoor parts
Dimensions (W*H*D)	Approx. 70 x 70 x 60 cm
Weight	Approx. 65 Kg
Power supply	220 VAC, maximum 500 W

UMBRELLA-1 Anti-Drone System PND-200/A

General Description

Drones have to determine their location (latitude & longitude) to send them to the command & control station and also move according to a predetermined route. This can be done using GNSS receivers. By deception of GNSS receivers, the target will lose one of its most important equipment. Umbrella 1 is a complete and compact system for the deception of drones' navigation.

The deception part of the system is used for GPS receiver in the L1 (C/A) band and GLONASS receiver L1 band. This system could be used in vehicular (installing on vehicular) and base station (installing on the mast) modes. All antennas used for the system are Omni-directional and can cover 360 degrees in the azimuth plane.

The system can deceive the target GPS and GLONASS receiver to a fixed position or a route that is drawn on the map in GUI by the operator. In the fixed position deception mode, the system can change the target GPS and GLONASS receiver parameters such as altitude, position (latitude & longitude). Moreover, in the route, the deception mode operator can change direction and speed. This act is done in a different section of the route. The operator can arbitrarily set all of these parameters in system GUI.

Features

- Tactical Transmitter case which is resistant against rain to be installed on the vehicle/mast
- Generating deception signal in GPS L1 (C/A) band and GLONASS L1 band.
- Modular construction
- Easy maintenance and repair
- Spoofing capability: to a fix position or a route
- Lightweight and compact size
- Resistant against vstan
- Portable design
- Easy transportation

Technical Specifications:	
Description	Range
Spoof Frequency band	GPS: L1 1575.42 MHz GLONASS: L1 1602 MHz
Power of RF Amps (each band)	30±2 dBm
MTBF	more than 1000 hours
MTTR	30 min
Antenna	Omni-directional
Antenna gain	≥0 dBi
Full-time operation	up to 24 hours
Output impedance	50 Ω
AC input supply	220V ±10% Power
consumption	About 100 w Weight
17 kg Dimensions (L×W×H) cm	12*30*45
Body	Aluminum and iron
Operating temperature range	Outdoor section: -10 ~ +55 °C
Storage temperature range	Outdoor section: -20 ~ +65 °C
Humidity	90% @ 36 °C
Vibration and shock	subjected to MIL-STD-810
Humidity	90% @ 36 °C
Sealing	Rain test

UMBRELLA-3 Anti-Drone UAV System GMA-640

General Description

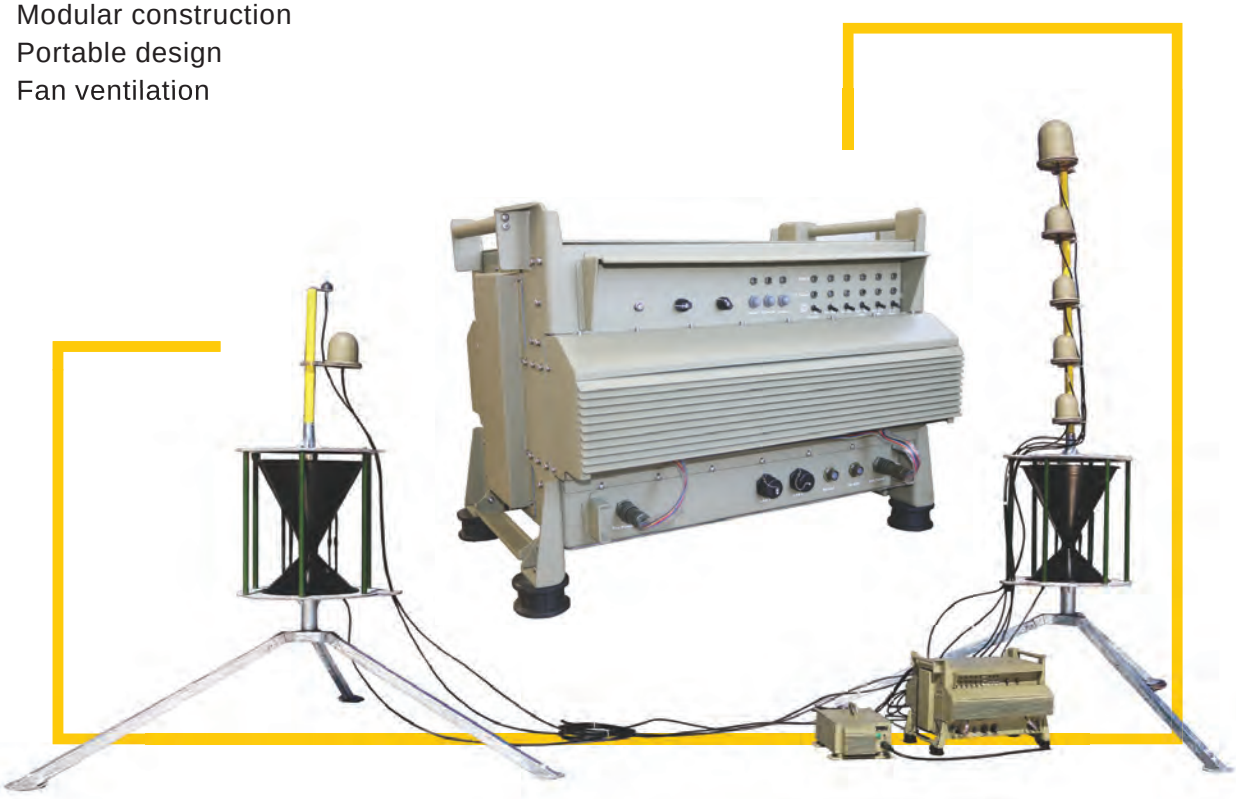
Drones have to determine their location (latitude & longitude) to send them to the command & control station and also move according to a predetermined route. This can be done using GNSS receivers. Jamming or deception of GNSS receivers will lose one of its most important equipment. Also, command and video links between pilot and most commercial drones and quadcopters are in the two frequencies. By jamming the links, the pilot cannot receive information from the drone (such as location) and also loses control (sending a command or receiving data) of the UAV.
Umbrella 3 is a complete and compact system for deception and jamming of drones as below:
1- Satellite navigation: commercial (GPS, GLONASS, Beidou, Galileo) jamming and commercial (GPS, GLONASS) deception.
2- Monitoring and jamming of communication link at 100MHz to 6GHz.
The jammer system is used for jamming on GNSS (GPS, GLONASS, Beidou, Galileo) Receivers,

and also monitor- ing and jamming communication link at 100MHz to 6GHz. The deception part of the system is used for GPS receiver in the L1 (C/A) band and GLONASS receiver L1 band. This system could be used in vehicular (mounting on vehicles) and base stations (installing on the mast) modes. All antennas used for the system are Omni-directional and can cover 360 degrees in the azimuth plane.

The system can deceive target GPS and GLONASS receiver to a fixed position or a route that is drawn on the map in GUI by the operator. In the fixed position deception mode, the system can change the target GPS and GLONASS receiver parameters such as altitude, position (latitude & longitude). Also in the route deception mode, the operator can change direction and its speed. This act is done in a different section of the route.

Features

- Monitoring frequency band: 100MHz to 6GHz.
- Jamming frequency band: 100MHz to 6GHz.
- Jamming GPS, GLONASS, Beidou, Galileo with high efficiency
- Generating deception signal in GPS L1 (C/A) band and GLONASS L1 band.
- Resistant against vibration, shock according to the standards
- Easy maintenance and repair
- Spoofing capability: to a fix position or a route
- Light weight and compact size
- Easy transportation
- Modular construction
- Portable design
- Fan ventilation



Technical Specifications:	
Description	Range
Jamming frequency band	GPS GLONASS BEIDOU GALILEO 100~500MHz 500~2500MHz 2000~6000MHz
Monitoring frequency band	100 MHz~6 GHz
Bandwidth of Monitoring remte control band	100 MHz
Spoof frequency band	GPS L1 1575.42 MHz GLONASS L1 1602 MHz GPS L1 (4 watts) GLONASS L1 (4 watts) BEIDOU B1 (4 watts) GALILEO E1 (4 watts) 100~500MHz (100 watts) 500~2500MHz (100 watts) 2000~6000MHz (80 watts)
MTBF	more than 1000 hours
MTTR	45 min
Antenna	Omni directional
Output impedance	50 Ω
Full-time operation	up to 6 hours
AC input supply	220V ±10%
Power consumption	About 3 Kw
Sealing	Rain test
Weight	28 kg
Dimensions (L×W×H) cm	50*40*35
Body	aluminum and iron
Operating temperature range	Outdoor section: -10 ~ +55 °C
Storage temperature range	Outdoor section: -20 ~ +65 °C
Humidity	90% @ 36 °C
Vibration and shock	subjected to MIL-STD-810

UMBRELLA-2 Anti-Drone System GND-200

General Description

Drones have to determine their location (latitude & longitude) to send them to the command & control station and also move according to a predetermined route. This can be done using GNSS receivers. Jamming or deception of GNSS receivers will lose one of its most important equipment. Also, command and video links between pilot and most commercial drones and quadcopters are in the two frequencies. By jamming the links, the pilot cannot receive information from the drone (such as location) and also loses the control (sending a command or receiving data) of the UAV. Umbrella 2 is a complete and compact system for deception and jamming of drones as below:

1- Satellite navigation: commercial (GPS, GLONASS, Beidou, Galileo) jamming and commercial (GPS, GLONASS)
deception.

2- Monitoring and jamming of communication link at 2.4 GHz and 5.8 GHz:

The jammer system is used for jamming on GNSS (GPS, GLONASS, Beidou, Galileo) receivers, 2.4 GHz, and 5.8 GHz bands. The deception part of the system is used for GPS receiver in the L1 (C/A) band and GLONASS receiver L1 band. This system could be used in vehicular (mounting on vehicles) and base stations (installing on the mast) modes. All antennas used for the system are Omni-directional and can cover 360 degrees in the azimuth plane.

The system can deceive the target GPS and GLONASS receiver to a fixed position or a route that is drawn on the map in GUI by the operator. In the fixed position deception mode, the system can change the target GPS and GLONASS receiver parameters such as altitude, position (latitude & longitude.) Also in the route deception mode, the operator can change direction and its speed. This act is done in a different section of the route.

The operator can arbitrarily set all of these parameters in system GUI.

Features

- Monitoring and jamming on command and video link in 2.4 and 5.8 GHz
- Tactical Transmitter case which is resistant against rain to be installed on the vehicle/ mast
- Jamming GPS, GLONASS, Beidou, Galileo with high efficiency
- Generating deception signal in GPS L1 (C/A) band and GLONASS L1

band.

- Resistant against vibration, shock according to the standards r a route
- Modular construction
- Easy maintenance and repair
- Spoofing capability: to a fix position o
- Lightweight and compact size
- Easy transportation
- Portable design
- Fan ventilation

Technical Specifications:	
Description	Range
Jamming frequency band	GPS GLONASS BEIDOU GALILEO 2.4 GHz 5.8 GHz
Power of RF Amps	GPS L1 (4 watts) GLONASS L1 (4 watts) BEIDOU B1 (4 watts) GALILEO E1 (4 watts) 2.4 GHz (100 watts) 5.8 GHz (80 watts)
Bandwidth of Monitoring remte control band	80 MHz
Spoof frequency band	GPS: L1 1575.42 MHz GLONASS: L1 1602 MHz
MTBF	More than 1000 hours
MTTR	30 min
Antenna	Omni-directional
Output impedance	50 Ω
Full time operation	Up to 12 hours
AC input supply	220V ±10%
Power consumption	About 1 Kw
Sealing	Rain test
Weight	28 kg
Dimensions (L×W×H) cm	50*40*35
Body	Aluminum and iron
Operating temperature range	Outdoor section: -10 ~ +55 °C
Storage temperature range	Outdoor section: -20 ~ +65 °C
Humidity	90% @ 36 °C
Vibration and shock	Subjected to MIL-STD-810

UMBRELLA-4 Multifunction system for Anti-Drone and Tactical UAV System TMA-640

General Description

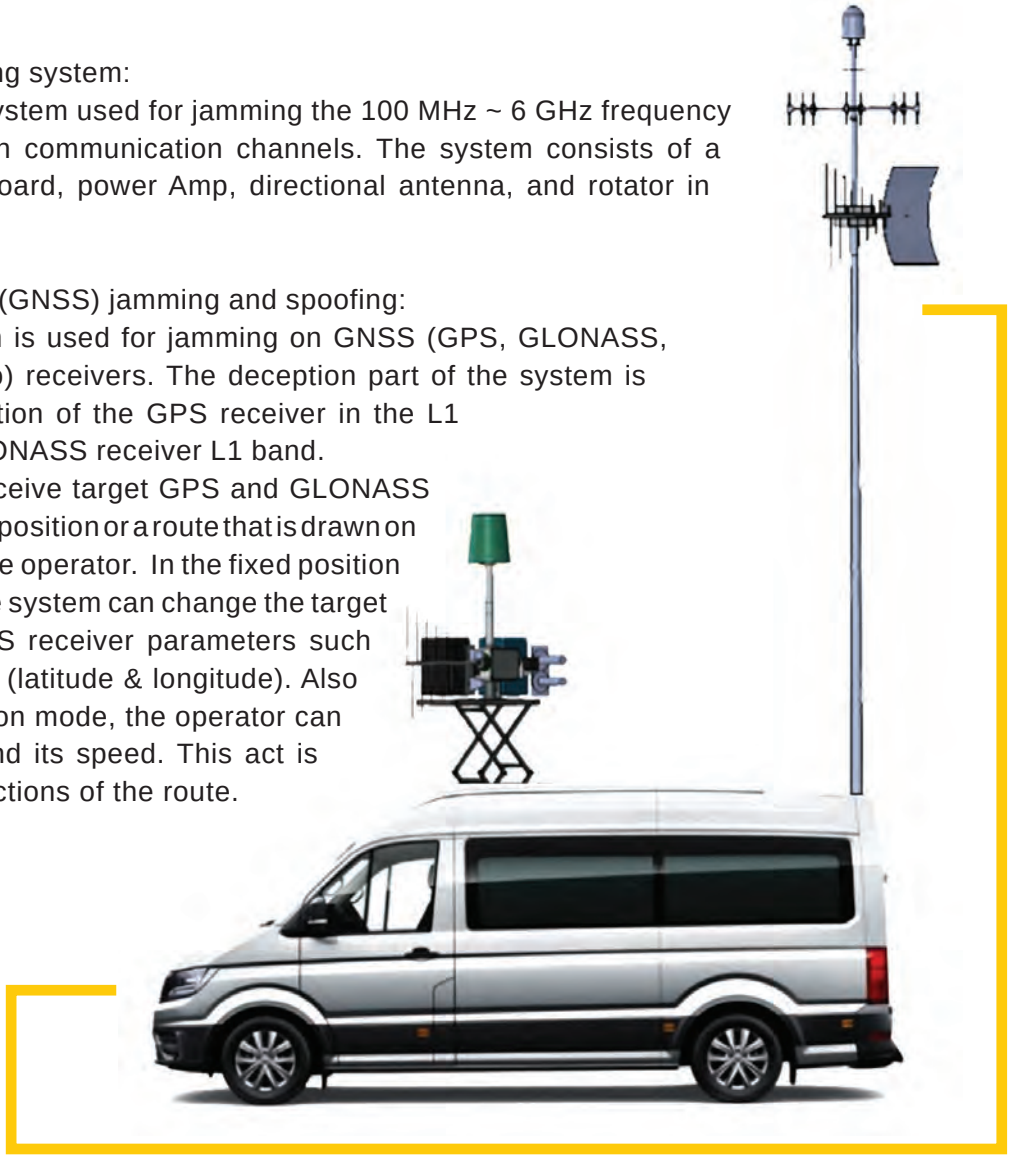
This complete system is designed and manufactured to detect and jam small and medium-size tactical UAVs and Drone's data link and satellite navigation systems.
The complete production in 1 VAN vehicle consists of these systems:

The detection & Tracking system is consists of:

- Ku-Band Radar
- 100 MHz ~ 6 GHz frequency monitoring & Surveillance system
- 100 MHz ~ 6 GHz Direction-finding
- Thermal camera

RF Datalink Jamming system:
This is a complex system used for jamming the 100 MHz ~ 6 GHz frequency band of UAV's main communication channels. The system consists of a receiver, process board, power Amp, directional antenna, and rotator in several sub-bands.

Satellite navigation (GNSS) jamming and spoofing:
The jammer system is used for jamming on GNSS (GPS, GLONASS, Beidou, and Galileo) receivers. The deception part of the system is used for the deception of the GPS receiver in the L1 (C/A) band and GLONASS receiver L1 band.
The system can deceive target GPS and GLONASS receiver to a fixed position or a route that is drawn on the map in GUI by the operator. In the fixed position deception mode, the system can change the target GPS and GLONASS receiver parameters such as altitude, position (latitude & longitude). Also in the route deception mode, the operator can change direction and its speed. This act is done in different sections of the route.



Features

- Monitoring & jamming frequency band: 100 MHz to 6 GHz.
- Jamming GPS, GLONASS, Beidou, Galileo with high efficiency
- Generating deception signal in GPS L1 (C/A) band and GLONASS L1 band.
- Spoofing capability: to a fix position or a route
- KU band radar with special design to detect drones
- 100 MHz ~ 6GHz DF with a special vehicle designed
- Tactical design

Technical Specifications:	
Description Navigation	Range
Navigation Jamming Frequency Band	GPS: L1:1575.42 MHz, L2:1227.6 MHz, L5: 1176.45 MHz GLONASS: L1:1602.0 MHz, L2:1246 MHz BEIDOU: B1: 1561.098 MHz, B2: 1207.14 MHz GALILEO: E1:1575.42 MHz, E5a: 1176.45 MHz E5b: 1207.14 MHz, E6:1278.75 MHz
Navigation Power of RF Amps	8*35 W
Navigation Spoofing Frequency Band	GPS: L1:1575.42 MHz
RF Data Link Jamming Frequency Band	100 ~ 500 MHz (100 watts) 500 ~ 2500 MHz (100 watts) 2000 ~ 6000 MHz (100 watts) RF
Data link jamming antenna gain	100 ~ 500 MHz (LPDA: 6dB) 500 ~ 2500 MHz (LPDA: 7dB) 2000 ~ 6000 MHz (Horn: 8dB~12dB)
Tuner	20 MHz ~ 6 GHz
Monitoring frequency band	100 MHz ~ 6 GHz
The bandwidth of RF Data Link Monitoring and Jamming	175 MHz
RF Data Link Jamming Antenna Polarization	Vertical
Navigation Antenna Polarization	Circular, right-turn
Navigation Antenna Gain	10 dB
Radar Frequency	Ku band
Type of Radar	FMCW
Range of Radar Detection	Up to 10 Km.
Operating Temperature Range	Outdoor section: -10 ~ +55 °C
Storage Temperature Range	Outdoor section: -20 ~ +65 °C
Humidity	90% @ 36 °C
Vibration and Shock	Subjected to MIL-STD-810
Direction Finding System	20 MHz ~ 6 GHz
Surveillance System	With directional antenna and rotator
Jamming Rotator	N round with slip ring
Surveillance Rotator	N round with slip ring

Control & Monitoring System

Control and monitoring system with a combination of devices and applications (server-client), using Satellite technology and GPS over GSM network infrastructure, helps in tracking mobile resources, locating their geographical addresses, and making it feasible to optimally manage them.

CMS-1102 Model

• Displaying the geographical location on the map by online tracking

• Device automatic movement recognition and stopping data transmission to save SIM card credit

• Ability to show speed, direction, battery charge level, status information of the vehicle i.e. being turned on/off

• Remote control of the device

• Sending information via SMS

• Voice conversation between driver and manager

• Saving location data on memory (MMC)

• Viewing SIM card credit and the ability to charge it online

• Setting up the device remotely via sending SMS or using GPRS

• Specifying restricted areas on vehicle movements

• Sending commands to the vehicle i.e. turning off the engine and connection with the car alarm (Optional)

• Able to be connected to the police communication port and required information can be transferred to the police server

• Showing management reports on fuel consumption, mobility, movements, etc.

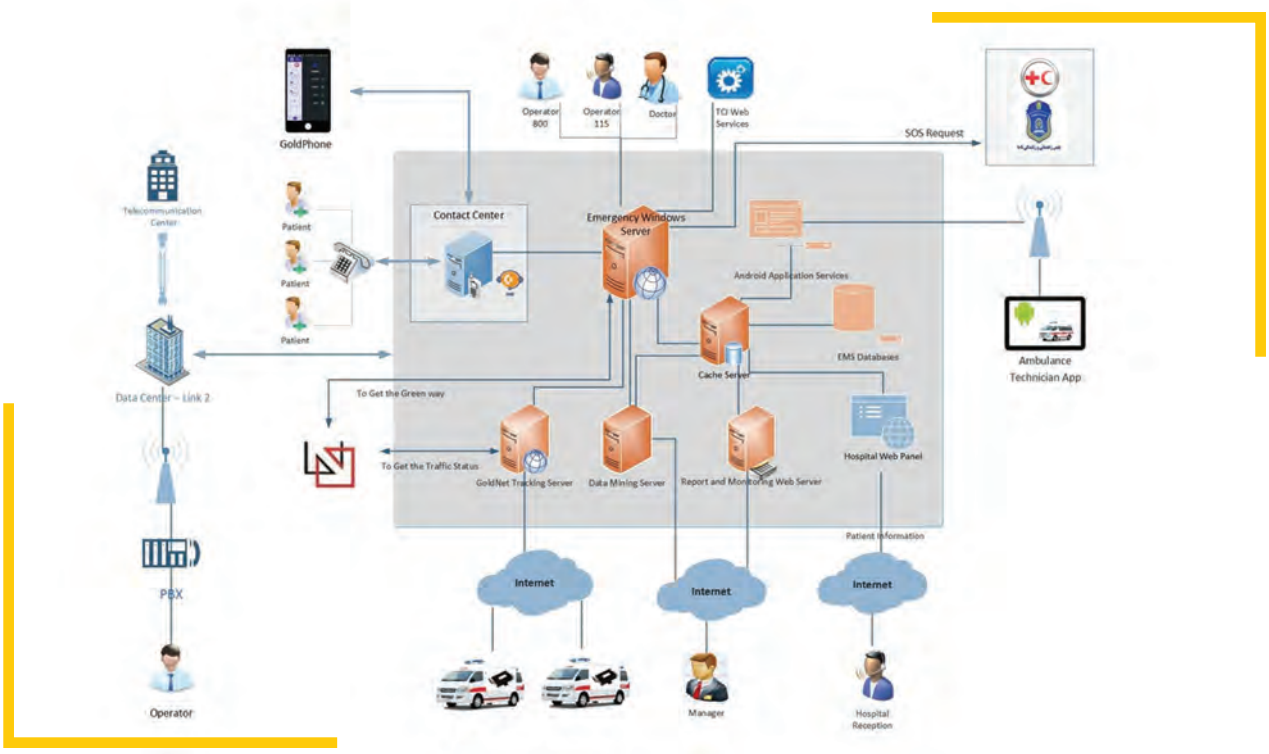
• Defining a periodical time interval or a specified distance for sending data

• Possibility of filtering features, grouping and defining the permitted areas

• Mobile phone application (Android/ IOS)

• Warning notification to inform the operator of permitted area exceed, speed limits exceed, stop time limit on a spot through user software or by sending an SMS or Email to a specific phone number or Email address

Control & Monitoring System



Parameter		Specification	Description
GSM	Frequency band	900/1900/1800 MHz	GPRS Class 10 with a maximum rate of 6 kbps
		1800/900 MHz	GSM Antenna
	Gain	5db	
	Power output	2 watts to 1 watt 900 MHz band and 1800 MHz band	GSM Antenna
GPS / GLONASS	Frequency band	1507/1602 MHz	GPS Antenna
	Gain	4db	GPS Antenna
	Channel receiver	56	----
	Receiver sensitivity	148 dBm 156 dBm 162 dBm	Acquisition Reacquisition Tracking
	Position accuracy	less than 2.5 meter	----
	Speed accuracy	less than 0.1 m/s	----
Operation Temp		-20 to +55 °C	----
Dimension		110 *90 * 25 mm	Approx.
Electrical Battery		Voltage: 3.7 V Capacity :1100mAh	Double usage capability

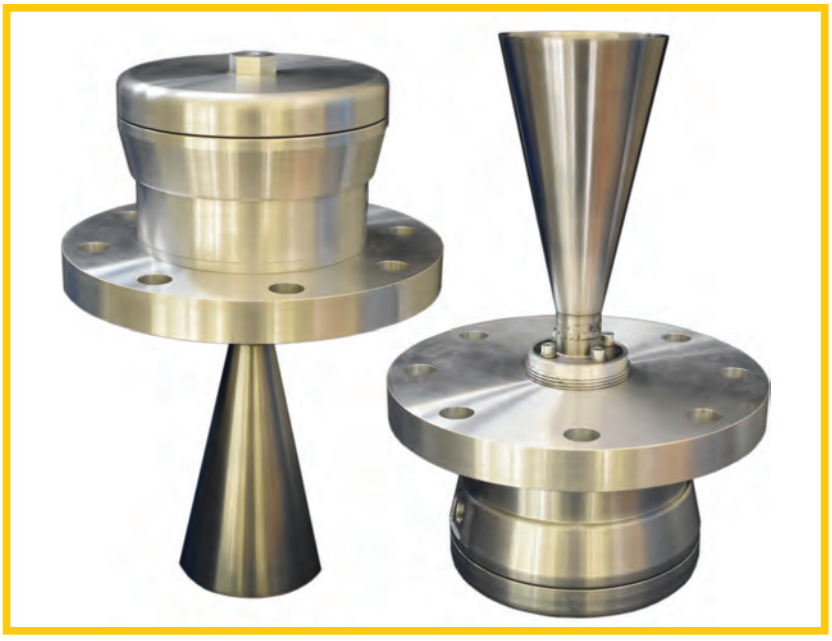
Level Meter Radar LMR100

Introduction

The Level Meter Radar LMR100 is a non-contact measuring device with excellent reliability in a wide range of applications. This Radar is based on FMCW (frequency modulated continuous wave) technology which is suitable for high temperature and high-pressure applications. It operates in a 24-26GHz frequency band to ensure that it delivers both accuracy and reliability in a wide variety of level gauging applications. The Level Meter is designed for measuring distance, level, volume, and reflectivity of liquids and solids.

Features

- State of the art technology
- High accuracy
- Compact in size
- Liquid & Solid Applications
- Non-contact measuring
- Easy installation
- Unaffected by tank pressure and temperature



Specifications	
Frequency	24GHz (X-Band is available on request)
Sweep	2GHz
Radiated Power	<5mW Accuracy: ±3mm (±1mm is available on request) Measuring Range: 0.5 to 30m
Output Signal	4 -20mA/HART 2 Wires
Protection Category	IP66/67 Approvals: EXd IICT6

MLAT Surveillance System MLAT1290

Introduction

MLAT1290 (Multi-late ration) is a surveillance system that receives and locates transponder and other transmissions radiating from aircraft on various frequencies, typically 1090 MHz the frequency used by IFF, SSR, Mode S and ADS-B transponders. Nowadays, these same techniques are used for larger areas such as en-route or approach areas. Such systems are called Wide Area MLAT (WAM) systems.

An MLAT system detects, locates, and identifies cooperating targets by receiving and processing suitable signals emitted by onboard transponder devices, according to the SSR international standards. In MLAT systems, receiving stations are placed in some strategic locations around the area to be covered.

Technical Features	
Processed Signals	Modes 1,2,4, 3/A,C,S including ADS-B
Position Accuracy	<100 m in the coverage area <7 m in Terminal area
Target Capacity	Up to 1500 targets
Track Initiation	< 5 seconds
Update Rate	Configurable between 1-4 sec, if the response is available
System Latency	250 ms
Data Formats:	ASTERIX, SNMP

RX Station	
Channel	1090MHz
Bandwidth	8MHz
Sensitivity	-92dBm
Reply Type	Mode A/C, IFF modes1,2,4, Mode S, ADS-B

Environmental condition:

Outdoor units are -40° C to +70° C

Indoor units are 0° C to +50° C

FMCW Radar Altimeter RAL100

General Description

RAL100 radar is a high-performance radar system used to track the earth terrain and calculate the aircraft´s altitude by transmitting a frequency modulated continuous wave signal.
In RAL100 radar, the transmitted frequency is varied as a function of time in a known manner and The distance measurement is accomplished by comparing the frequency of the received signal to a reference.
Its modular architecture allows adapting integrity level to the necessities of each platform.
The system is designed to meet aircraft, helicopters, and trainers' requirements.

Features

- Jamming resistance
- Low power
- High precision
- Interface flexibility
- Easy integration
- Easy maintenance
- Enhanced tracking performance even in case of severe maneuvers in roll and pitch

OPERATIONAL SPECIFICATIONS	
Accuracy:	±2 feet for altitude bellow 100 feet and ±3% altitude for altitude above 100 feet
Altitude Range:	0 To 5000 Feet
Operational Elevation:	Up To 50000 Feet
Operational Temperature	-40 c To +71 c
EMI / EMC:	According to MIL-STD-461/462
Tracking Capability:	Up To 2000 Feet/Sec
Altitude Tracking:	Up To 30 degrees Pitch & Roll
Environmental Condition:	According To MIL-STD- 810F
Power Supply:	28 VDC/115 V AC 400 Hz
MTBF:	1000 Hour
Weight:	4 To 6 Kg
Dimension:	185×100×150 mm

TRANSMITTER AND RECEIVER SPECIFICATIONS	
Transmitter:	
Frequency	4.3 GHz ± 62.5 MHz
Power Output	27 dBm max
Output VSWR	1.1:1 typ ,1.3:1Max
Sweep Time	16 msec
Power Control Management	-45dB
Spurious &HarmonicsRejection	≤ 80 dB of fundamental
Impedance	50 OHM
Receiver:	
Frequency	4.3 GHz ± 62.5 MHz
Bandwidth	123MHz
Intermediate frequency	700 Hz to 168 kHz
IF Bandwidth	168 kHz
IF output	-40 dB min
Leakage of Transmitter signal to receiver port	≤ -73dBm
Maximum damage less power	32dBm
Input Power Range	-95~ -60 dBm
VSWR	1.1:1 typ, 1.3:1 Max
Internally AGC	Yes
EMI/EMC test capability	Yes
Built-in test Capability	Yes
Impedance, Input/output	50 OHM
Antenna:	
Antenna Gain	10dB
Isolation	>70dB
VSWR	1.8
Polarization	horizontal
Antenna Weight	0.15Kg

METR-X Meteorological Radar (X band)

Meteorological radars are one of the most important components of a flood warning system. They can be used to issue early warnings and to reduce the risk of future floods. In this system, the operator can access either raw data or meteorological products. The software supports different languages. The customizable geographic display maps of the METR-X help radar operators as well. It is available with single or Dual Polarization (DP) technology. The dual-polarization option enhances the measurement of precipitation intensity and makes way for the categorization of different types of hydrometeors like drizzle, rain, hail, and snow.

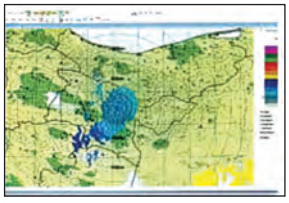
Features

- Calculating the surface rainfall intensity
- Calculating the amount of precipitation accumulation
- Calculating the velocity and direction of cloud movement
- Calculating integrated rainfall
- Calculating integrated reflectivity
- Estimating hazardous phenomenon
- Identifying the probability of thunderstorm happening
- Automatic omitting of clutter caused by mountains, different birds, and planes
- Distinguishing the type of rainfall
- Distinguishing the type of cloud
- Standard meteorological products such as PPI, RHI, CAPPI, PCAPPI, EHT, ETOP, EBAS, Max and VCUT

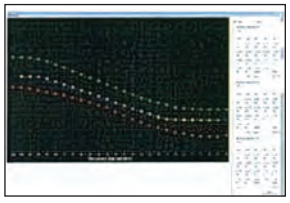
Technical Specifications	
Mode	Doppler, dual-polarized
Frequency band	X-Band
Pulse Width	0.3 — 2.5 µs
Pulse Repetition Frequency [PRF]	250 — 3000 Hz
Typical Operational Range / Technical Range	100 Km / 600 Km
ANTENNA	
Type	Parabolic, prime-focus reflector
Reflector Diameter	1.8 m
Minimum Gain	> 42 dBi
Polarization	horizontal and vertical
TRANSMITTER	
Type	Coaxial Magnetron with solid-state modulator
Peak Power	75 KW

MAXIMUM REFLECTIVITY

PLAN POSITION INDICATOR

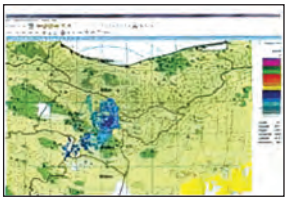


ECHO TOP HEIGHT

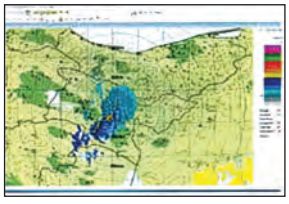


RECEIVER CALIBRATION

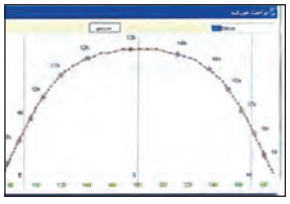
PSEUDO CONSTANT ALTITUDE PLAN POSITION INDICATOR



CONSTANT ALTITUDE PLAN POSITION INDICATOR



ECHO BASE HEIGHT



NORTH FINDING USING SUN POSITION

SEI weather radar WR-94

The weather radar is used as a practical or research radar to study and find out the weather status. The weather radar has a 16-bit ADC convertor with high-resolution pictures of more than 12501250 pixels. The radar is equipped with a multi-language software which can be monitored in several modes such as PPI.EHT, ETOP, EBAS, MAX, VCUT, PCAPPI, CAPPI, RHI

WEATHER RADAR SPECIFICATION	
Frequency band	X-band
Antenna type	Parabolic
Antenna diameter	3m
Antenna gain	46 dB
Horizontal bandwidth	0.75 degree
Vertical bandwidth	0.75 degree
Polarization	Vertical
Antenna rotation speed in azimuth	33 degree/sec
Antenna rotation speed in elevation	12 degree/sec
Azimuth scanning range	360 degree
Elevation scanning range	1 to 39 degree
Azimuth antenna tuning accuracy	0.088 degree
Elevation antenna tuning accuracy	0.044 degree
Transmitted peak power	100 KW
Transmitted pulse width	2 pec
Receiver type	Superheterodyne
Receiver sensitivity	-130 dEliw
Pulse repetition frequency	400 Hz
Range resolution	300 m
Max. radar range	375 km
Update time	10,15,20,30,45,60 min

PAR-X30 Precision Approach Radar

General Description

Precision Approach Radar (PAR) is a type of radar guidance system designed to provide lateral and vertical guidance for an aircraft pilot during landing until the landing threshold is reached. After the aircraft reaches the Decision Height (DH) or Decision Altitude (DA), guidance is advisory only. This system is used in air traffic control and precision guidance of aircraft and helps pilots keep the aircraft on course and glide path during the final approach.

PAR-X30 is one of the most important sensors in Air Traffic Control Systems and plays a very important role in providing flight safety, especially in landing operations, for both civil and military aircraft. This system is a very high precision, 3D system working in X-band frequency and specifically designed to help pilots in landing fighters even on the shipboards.

Features & Applications

Increasing flight safety during the landing especially at night, rainy and dusty weather. Checking and controlling the aircraft function and guiding the aircraft in three dimensions (range, azimuth, altitude) on the airport glide path from the landing point to the distance of up to 30 km. Communicating with other airport radars such as PSR and SSR.

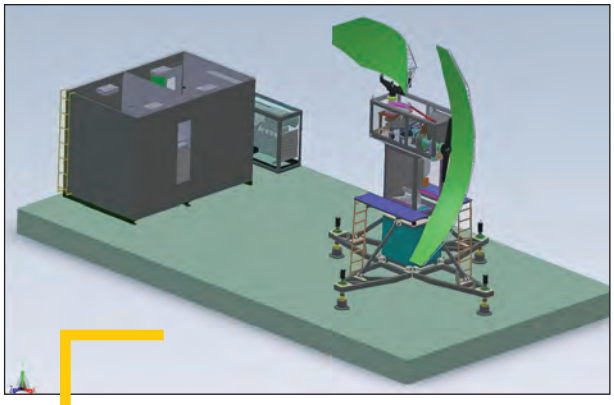
Checking and measuring flight altitude to improve the landing operation.

Being full function controlled and monitored in air traffic control tower through optical or radio links.

Technical Specifications			
Operation frequency		X-Band (9.0 ~9.2 GHz)	
Antenna	Azimuth	Beam width: 0.85*3.5 degree	
		Max. gain: 38.5 dB (in linear polarization)	
	Elevation	Beam width: 0.65*3 degree	
		Max. gain: 39.5 dB (in linear polarization)	
Transmitter	Type	Solid State	
	Power	100 Watt (peak), 15 Watt (average)	
	Pulse width	Short	500 ns
		Long	40 µs in LFM or NLFM modulation
Receiver	Type	Full coherent solid state	
	Gain	Max. 75 dB (Controlled by STC)	
	Noise figure	3.5 dB	
	Bandwidth	4 MHz	
Environmental Conditions	Temperature	Indoor : -10° C ~ + 45° C	
		Outdoor: -30° C ~ + 60° C	
	Humidity	90% @ 40° C	
	Wind speed	90 km/h (operation)	
		120 km/h (nonoperation)	
MTI factor		45 dB	
Power Supply		380 VAC (50-60 Hz), 3-phase, Max input: 10 kw	
MTBF		2000 hr	
Turntable		200°	

Tactical Specifications		
Coverage	Range	35 km
	Vertical	-1° ~ +10°
	Horizontal	-10° ~ +10°
Accuracy	Range	25 m
	Azimuth	Better than 0.3°
	Elevation	Better than 0.25°
Resolution	Range	<100 m
	Azimuth	0.85°
		0.65°

* ICAO annex -10 compliant



ASR (Airport Surveillance Radar)

General Description

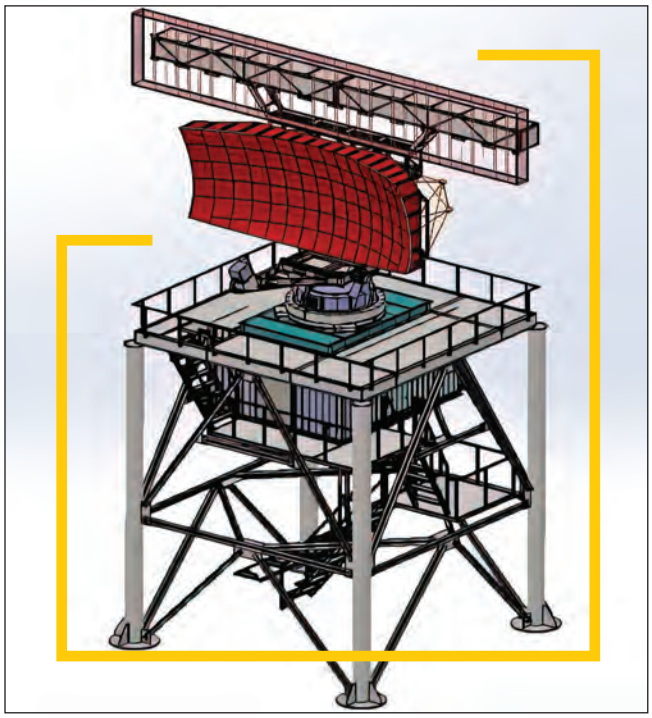
ASR is an S-band radar system used at airports to detect and display the position of aircraft in the terminal area. Utilizing ground controllers, this system is responsible for controlling and guiding aircraft in the air and on the ground. The primary goal of the system is to separate aircraft to prevent their accidents, to organize and accelerate the air traffic flow, and to provide the necessary information for the pilot. In some countries, this system plays a shielding and defending goal as well. Other services of this system include providing information for the pilot, atmospheric and navigation information, and NOTAMS (Notices to Airmen). This system is capable of reliably detecting and tracking aircraft at altitudes below 40,000 feet and up to 150 nautical miles of their airport.

Features

- High reliability
- Continuous target tracing
- High stability
- High dynamic range
- Pulse compression with small side lobes
- MTD processor
- Two receiver channels
- Two beams polarized dual feed horn CSC^2 antenna
- Automatic switching for the best probability of detection
- ICAO certificate

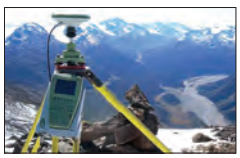
Technical Specifications			
Item	Description		IEI System
1	Frequency (MHz)		S-band
2	Max. Range (NM)	RCS = 100 m^2	150
		RCS = 10 m^2	100
		RCS = 5 m^2	80
		RCS = 2 m^2	60
		RCS = 1 m^2	50
3	Min. Range (NM)		0.5
4	Probability of detection		0.8
5	Probability of false alarm		10-6
6	Antenna gain (dB)		32-34
7	Pattern type		cosec2
8	Azimuth beam width (°)		1.4
9	Elevation beam width (°)		5.5-6.5
10	Azimuth coverage (°)		360
11	Elevation coverage (°)		0~32
12	Height coverage (ft.)		40000
13	Polarization		Linear/circular
14	Antenna rotation speed (RPM)		6
15	Operating wind speed (Km/h)		120

Technical Specifications		
Item	Description	IEI System
16	Non-operating wind speed (Km/h)	180
17	External operating temperature (°C)	-30~55
18	Antenna Sidelobe suppression (dB)	-23
19	Short/ long pulse width (μs)	4/200
20	Short / long pulse compression ratio	10/500
21	Peak power (KW)	20
22	Type of transmitter	Solid-state
23	Cooling transmitter	By air
24	Receiver Noise figure (dB)	2.5
25	Number of A/D bits	14
26	Range accuracy(m)	100
27	Range resolution (m)	200
28	Azimuth accuracy (°)	0.2
29	Azimuth resolution (°)	2.8
30	The tilt of the antenna (°)	-2~7



Positioning and Navigation

- Performing all necessary calculation on collected data using scientific and commercial software.
- Controlling and supervising the technical and executive process of calculations in surveying projects.
- Calculating Qibla direction
- Establishing geodetic networks.
- Collecting data using surveying.
- Installing and implementing permanent positioning system.
- Interpreting aerial and satellite images.



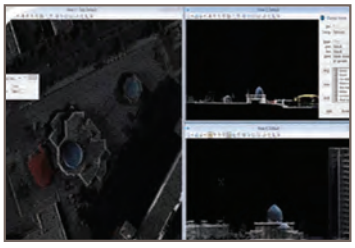
Collecting Spatial and Aerial Data

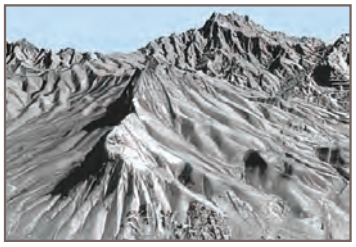
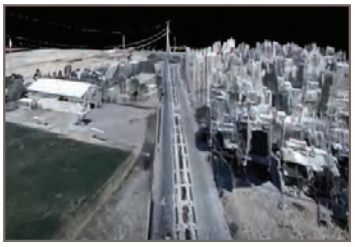
• Designing and implementing a digital aerial photogrammetry and laser scanning using a manned aircraft and an unmanned aerial vehicle with the aim of producing large scale coverage 3D maps.
• Establishing and implementing fixed and mobile stations which directly receive information and satellite images in different spatial resolutions across a 2800 kilometer peripheral radius and perform the related processing.




Processing and Map Production

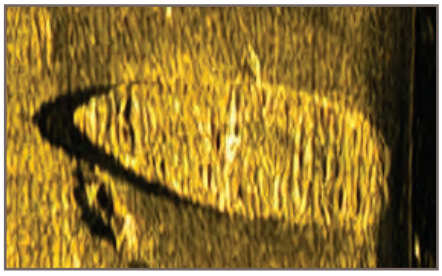
• Producing DTM, DSM and DEM using aerial laser scan data, coverage images and etc.
• Producing orthophoto mosaic map in different scales.
• Establishing spectral library.
• Performing aerial and satellite image triangulation, radiometric and geometric correction and image classification.
• Producing different (large/medium/small) scale coverage 3D maps.
• Producing thematic maps.




Hydrography and Oceanology

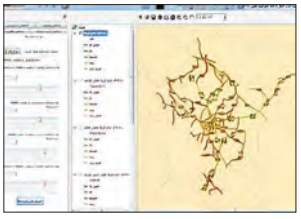
- Hydrography of ports, shores and bodies of water.
- Collecting and measuring physical (temperature, density,salinity)andchemical parameters of water.
- Data processing.
- Producing maritime information and different charts (paper, digital, electronic).
- Establishing stations for tidal analysis on coasts and ports.



Geospatial Information Systems (GIS)

- Creating the necessary base for implementing a comprehensive spatial data bank, providing satellite data and spatial services via internet and intranet.
- Implementing mobile and web-based GIS systems.
- Creating a national spatial data infrastructure to save, present and search spatial data.
- Designing and implementing desktop analytic systems based on open sources and commercial software.

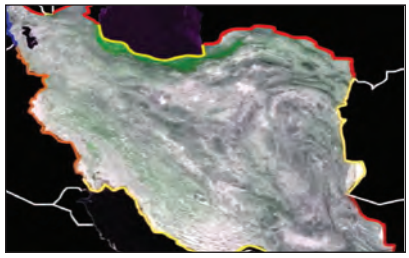




Border Issues

- Border-line modernization in participation with neighboring countries and one-way border line mechanization.
- Updating and observing spatial information across common borders.
- Positioning and installing border signs.
- Periodic monitoring of border signs in regard of their structure, location and updating.
- Providing technical plans and border line consultancy.






Geodynamics and Spectral Library

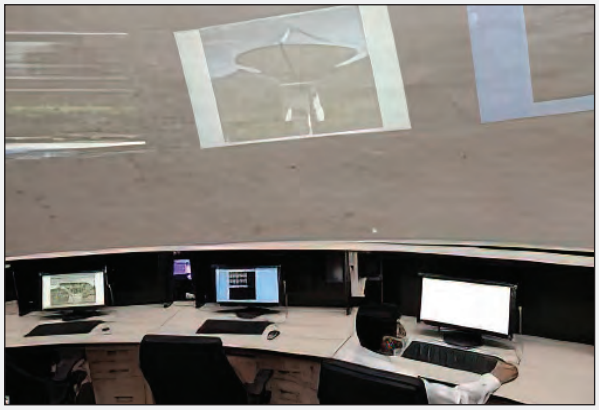
- Gravimetry and measuring relative gravity.
- Electromagnetic studies using ground penetrating radar and explorative operations in magnetometry.
- Geo electrics and investigating conductivity of Earth layers.
- Investigating earthquakes, landslides, subsidence, movements of earth crust, changes in earth magnetic field, changes in parameters of stratosphere and Ionosphere layers. Identifying and monitoring hazards related to the earth and upper atmosphere.
- Recording spectral reflectivity of geographic features based on different wavelengths.
- Identification and separation of different features based on different reflectivity behaviors.
- Analyzing atmospheric and environmental parameters.



Navigation, Control and Tracking

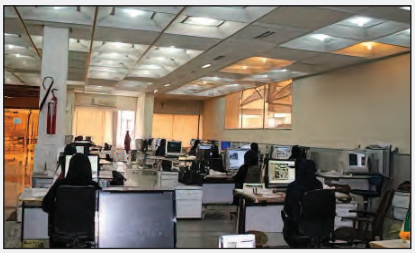
- Accessing orbital information on satellites passing national space.
- Accessing immediate monitoring information for quick warning.
- Searching satellites based on radio waves sent by them.
- Monitoring and tracking spatial objects and systems in the outer space.
- Navigating domestic satellites and orbital traffic management.
- Positioning satellites in the space relative to time.



Faculty of Geomatic Sciences

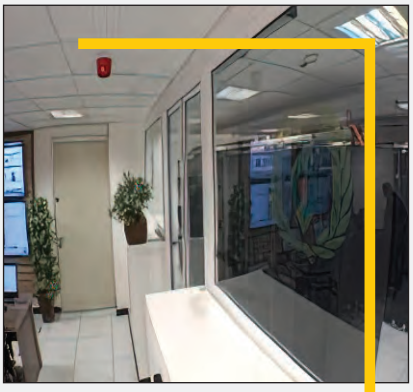
• Cooperating with and providing educational services in graduate courses (MS and Ph.D.) of Geodesy, Photogrammetry, Remote Sensing, Hydrography, and GIS.
• specialized theoretical and technical training courses on different software and equipment in new geomatic sciences
• Teaching underground mapping, urban and agricultural cadastral mapping and other educational courses.
• Holding higher education courses at undergraduate and graduate levels in mapping engineering, Photogrammetry, cartography under the license of Science, Research and Technology Ministry.






Data Center

• Offering the fastest data transmission rate.
• Installing only a single version of the necessary software on the server.
• Centralized and professional support of spatial data.
• Saving spatial data and providing high physical and electronic safety for this data type. Preventing of copying with redundancy and data replication.
• Providing the highest processing rate of spatial data at one location.




SELF DEFENSE SPRAYS

Nowadays the subject of **"**Unarmed Safety and Security**"** is gaining widespread acceptance and interest in urban societies. Non-lethal sprays (such as teargas and malodorant) are reasonable choices in cases where lethal weapons are considered a last resort solution in threat situations.

Applications:

- Ladies and elderly in threatening situations;
- Bank guards, cashiers, jewelry stores and other commercial institutions faced with burglary;
- High-rank politicians and military authorities holding classified documents;
- Police personnel in civil riots and demonstrations to deter angry mobs from destroying public facilities.

Effects:

The physical effects of the sprays are felt immediately. They include tearing and involuntary closure of the eyes with severe burning sensations of the skin. Coughing inflammation, mucous secretion, headache, dizziness, a tight feeling in the chest, or excessive salivation may result. These effects will disappear in a few minutes in fresh air but may remain for as long as four hours in closed doors.

Instruction:

- Remove the spray cap immediately;
- Keep the canister in an upright position at a distance of at least one meter from the attacking subject;
- Spray with force for a period of 1-3 seconds. The special spray valve directs the gas straight forward as far as 2 meters before the gas is dispersed into the surrounding air;
- Runaway immediately and inform the law enforcement authorities.

Caution:

- The use of this substance or device for any purpose other than self-defense is considered a crime by law.
- Do not spray to the elderly and children under 12 years of age.
- Do not spray indoors as the effects may last up to four hours.
- Do not touch your face before washing your hands after contacting tear gas.

CS Spray

Dispenser Specification:

- Dimensions (mm): Length: 115; Diameter: 35
- Burst (1 sec): 10
- The amount of formulation in each burst (ml): 1
- Dispense form: Mist
- Range (m): 1.5-2

Formulation Specification:

- Agent: CS
- Agent Percent: 2-10
- Volume (ml): 10
- Formulation type: Organic-based

Decontamination:
• Follow the below procedure in cases of accidental contamination with the agents.
• Transfer the victim to fresh air immediately.
• Rinse eyes and face with copious amounts of water to wash away the tear gas contamination and provide relief. (Note: warm water may intensify the burning and inflammation.)
• When washing the victims' faces, try not to rub and do not use oily lotions as these products may prolong the discomforting effects of agents.
• Remove all contaminated clothing from the victim.
• Pain may be reduced by taking an over the counter anti-inflammatory drug.

OC Spray

Dispenser Specification:
• Dimensions (mm): Length: 115; Diameter: 35
• Burst (1 sec): 10
• The amount of formulation in each burst (ml): 1
• Dispense form: Mist
• Range (m): 1.5-2

Formulation Specification:
• Agent: OC
• Agent Percent: 0.5-2
• Volume (ml): 10
• Formulation type: Organic-based

Decontamination:
• Follow the below procedure in cases of accidental contamination with the agents.
• Transfer the victim to fresh air immediately.
• Rinse eyes and face with copious amounts of water to wash away the tear gas contamination and provide relief. (Note: warm water may intensify the burning and inflammation.)
• When washing the victims face, try not to rub and do not use oily lotions as these products may prolong the discomforting effects of agents.
• Remove all contaminated clothing from the victim.
• Pain may be reduced by taking an over the counter anti-inflammatory drug.

CR Spray

Dispenser Specification:
• Dimensions (mm): Length: 115; Diameter: 35
• Burst (1 sec): 10
• The amount of formulation in each burst (ml): 2.5
• Dispense form: Mist
• Range (m): 3

Formulation Specification:
• Agent: CR
• Agent Percent: 0.1
• Volume (ml): 25
• Formulation type: Non-Flammable Propellant

Dispenser Specification:
- Dimensions (mm): Length: 159; Diameter: 35
- Burst (1 sec): 6
- The amount of formulation in each burst (ml): 9
- Dispense form: Jet stream
- Range (m): 6

Formulation Specification:
- Agent: CR
- Agent Percent: 0.1
- Volume (ml): 55
- Formulation type: Water Based- Non-Flammable

Malodorant Spray

Dispenser Specification:
- Dimensions (mm): Length: 115; Diameter: 35
- Burst (1 sec): 10
- The amount of formulation in each burst (ml): 1

Decontamination:
- Follow the below procedure in cases of accidental contamination with the agents.
- Transfer the victim to fresh air immediately.
- Rinse eyes and face with copious amounts of water to wash away the tear gas contamination and provide relief. (Note: warm water may intensify the burning and inflammation.)
- When washing the victims face, try not to rub and do not use oily lotions as these products may prolong the discomforting effects of agents.
- Remove all contaminated clothing from the victim.
- Pain may be reduced by taking an over the counter anti-inflammatory drug.

Training Spray

Dispenser Specification:
- Dimensions (mm): Length: 115; Diameter: 35
- Burst (1 sec): 10
- The amount of formulation in each burst (ml): 2.5
- Dispense form: Mist
- Range (m): 3

Formulation Specification:
- Agent: Inert
- Agent Percent: 0
- Volume (ml): 25
- Formulation type: Non-Flammable Propellant

Dispenser Specification:
- Dimensions (mm): Length: 159; Diameter: 35
- Burst (1 sec): 6
- The amount of formulation in each burst (ml): 9
- Dispense form: Jet stream
- Range (m): 6

Formulation Specification:
- Agent: Inert
- Agent Percent: 0
- Volume (ml): 55
- Formulation type: Water Based- Non-Flammable

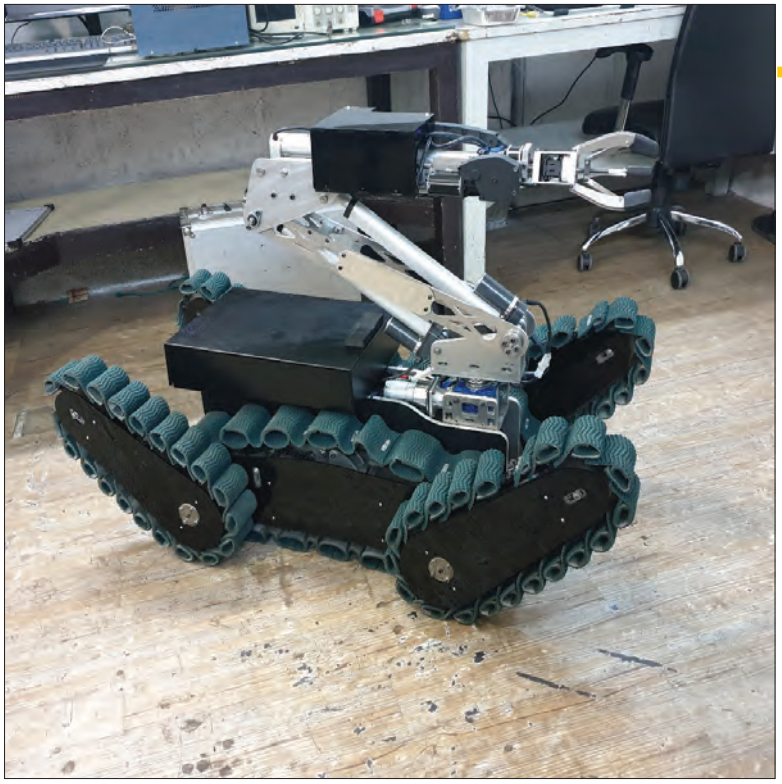
Mobile Remote Controlled Four-Flipper Detector Robot Able to Carry Loads Up to 70 Kg

Product Description:
The ground remote-controlled four-flipper robot with a multi-purpose platform is designed to complete remote controlled detection and weight carriage missions and it has high maneuvering ability, can spin 360º around the center, can move at different speeds, can do operations at environments with low-pressure (with high latitude) and long, direct radiation of the sunlight, and do operations at relatively dark areas.

Technical Details:
- Weight
- Chassis: 75 Kg
- Arm: 18 Kg
- Total weight: 93 Kg
- Dimensions (cm)
- Robot height without arm: 28
- Robot height with arm: 53
- Robot width: 59
- Robot length (when the flipper is closed): 78
- Robot length (when the flipper is closed): 134
- 4 degrees of freedom with the ability to increase the length of the second arm

• Speed: 20 mm/s
• Length: 30 cm
• Claw: 2 degrees of freedom

Functional time:
• 4 hours Total setup time of the robot and the system operator: Less than 60 seconds
• Moving mechanism: Chain tractive force; suspension system to making the move smoother, reduce the vibration and maximize friction with the ground
• Moving objects: Up to 5 Kg
• Functional temperature: -20 to +80 degrees of Celsius
• Maximum height of the passing objects: 50 cm
• Maximum crossable slope: 35 degrees from the horizon
• Maximum wireless communication reach with the robot: 800 meters without direct sight, 2000 meters in outdoor areas and with direct sight
• Ground station: 22" LCD, Full HD quality, Windows OS based computer
• Communication standard between electronic boards: RS485 standard
• Batteries charging time: Normal: 60 minutes; fast charging: 35 minutes
• Temperature sensor: reach of 8 meters, fast response, and high sensitivity
• Humidity sensor: Sampling rate 0.5 Hz, accuracy 2-5%
• Location sensor: Equipped with a GPS sensor and can send the location data to the base



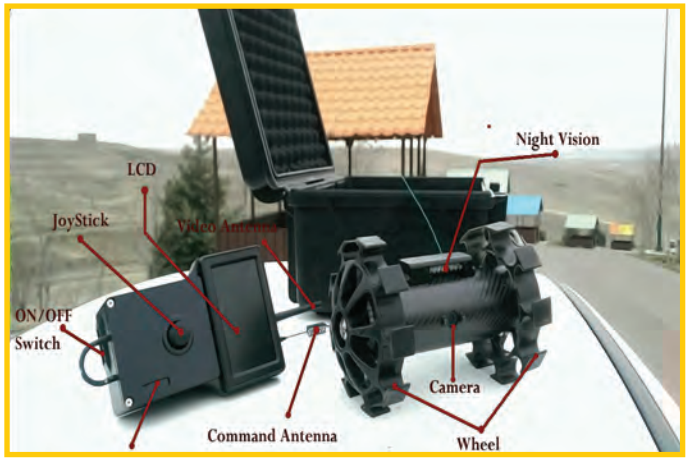
Small Hand-Thrown Remote Controlled Ground Robot

Applications:

In hostage rescue operations, turmoil, relief operations, etc.

Technical Details:

- Reach in the indoor area: 20 meters; reach in the outdoor area (direct line of sight)
- Speed: 4.0 m/s
- Resistance to free-fall: 7 meters
- Resistance to horizontal fall: 25 meters
- Length*Width*Height: 24*10*20 cm
- Functioning time: 30 minutes for flatlands



Features:

- Light-weight, small, and can be moved by one person
- Resistant to strike and falling
- Usable in totally dark
- Controlled by one person
- Sending real-time images and eavesdropping the sounds in the environment

7×42 Binocular Telescope

7×42 binocular telescope features 7X magnification, 42 mm objective diameter, and 7.3-degree field of view. This instrument is equipped with a compass. This binocular telescope application includes regular observation, finding the desired targets' magnetic direction of travel, tactical operations, reconnaissance, surveillance and tracking, monitoring, and fire control. The telescope consists of a compass image transfer mechanism and two rotating telescopes around a common axis that enable the adjustment of eyepieces' center distance (distance between exit pupils). In each telescope, the prisms turn the image upright and increase the stereoscopic depth by the line of sight displacement. By rotating each eyepiece's diopter in the clockwise or counter-clockwise direction, each telescope can be focused independently for the target observation at different distances. A ranging reticle is embedded inside the right eyepiece that can be used for the estimation of the objects' distance to the observer.

7×28 Binocular Telescope

7×28 binocular telescope features 10X magnification, 40 mm objective diameter, and 6.5-degree field of view. 7×28 binocular telescope's application includes regular observation, tactical operations, reconnaissance, surveillance and tracking, monitoring, and fire control. The telescope consists of two rotating telescopes around a common axis that enable the adjustment of eyepieces' center distance (distance between exit pupils). In each telescope, the prisms turn the image upright and increase the stereoscopic depth by the line of sight displacement. Rotating each eyepiece's diopter in the clockwise or counter-clockwise direction, each telescope can be focused independently for the target observation at different distances. A ranging reticle is embedded inside the left eyepiece that can be used for the estimation of the objects' distance to the observer.

SS-I-4 Sight Scope

SS-I-4 is a daytime riflescope designed and built for direct fire precision aiming and target acquisition of sniper rifles. It can be mounted on the weapons with Picatinny rail (MIL-STD-1913) and configured for their ballistic table. This scope has a continuous variable magnification from 3 to 12 and enjoys an Army Mil-Dot reticle designed for estimated ranging and precision aiming. This scope is equipped with a reticle adjustment mechanism in azimuth and elevation planes to compensate for bullet drop, wind drift, and moving target. The riflescope is armed with reticle illumination.

SS-I-21 Sight Scope

SS-I-4 is a daytime riflescope designed and built for direct fire precision aiming and target acquisition of sniper rifles. It can be mounted on any weapons and configured for their ballistic table.
This riflescope offers 6X, 8X, 10X, and 12X magnification and Army Mil-Dot reticle or any other asked by the customer, designed for estimated ranging and precision aiming. This scope is equipped with a reticle adjustment mechanism in azimuth and elevation planes to compensate for bullet drop, wind drift, and moving target. The riflescope is armed with reticle illumination.

Aviator Night Vision Goggle ANG-86

ANG-86 is an aviator's night vision imaging system that consists of binocular assembly,
Herein referred to as the binocular, a power (battery) pack, a carrying case, and ancillary equipment including a binocular holder (helmet mount), consisting of a mounting block, which allows the binocular to be aligned and adjusted. The binocular consists of two monoculars and a holder.
Each monocular consists of a body (monocular housing), an objective lens assembly, an image intensifier assembly. The holder provides each monocular to move sideways
(inter-pupillary distances adjustments). The power pack includes two battery compartments, each accepting two 1.5Vdc AA-size batteries in series. The power pack contains circuitry that monitors the voltage of the battery compartment in use and triggers a low battery indicator locator located in the binocular holder to blink when the batteries in that compartment approach end of life.
The carrying /storage case protects the binocular, power pack, and ancillary equipment against conditions associated with carrying these in the field environment and also damages associated with transportation, handling, and storage. It shall be used for commercial practices.







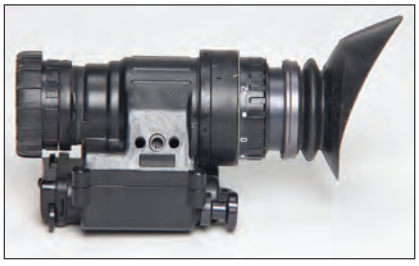


Monocular Night Vision Goggle: MNG-87

MNG-S7 night vision goggle is a battle-proven technology designed for the most demanding nighttime applications and rigors of combat. It is used in l11any special operations by elite armed forces and enables the user to perform J variety of tasks at night such as walking, patrol, map reading, and administering medical aid, it can be used on soldiers' head helmet. The MNG-87 is designed in a variety of ground-based night operations.

Features

- Lightweight.
- Ergonomic design.
- Rugged construction.
- Easy operation and maintenance.
- 18mm super generation image intensifier tube to offer crystal near super-bright viewing in visible and near-infrared.
- The capability of continuous passive operation over 15 hours without the need for battery replacement.
- Modular construction.



Application

It can be used as a handheld, head helmet-mounted, and weapon-mounted operation. Nocturnal observation, target location, perimeter surveillance, forward area observers, border patrols/customs and special forces, command, and control.
Rapid night time artillery fire control.
Terrain navigation.
Selection of fighting positions.
Search and rescue.
Law enforcement and drug trafficking control

Technical Specification	
Magnification	1X
Field of View	40°
Resolution	0.76 (cy/mr)
Objective Focal Length	27 mm
F-Number	1.2
Focusing Range	28 cm to infinity
Diopter Adjusting	+2 to -6 diopter
Eye Relief	25 mm
Operating Voltage	2.7 to 3 VDC
Type	2 AA Batteries
Operation Temperature Range	-32°C to +52°C
Storage Temperature Range	-35°C to +71°C
Weight	380 g
Image Intensifier Tube	2nd or 3rd Gen. (18mm, Inverter)

MSSR

NO	CHARACTERISTIC	TECHNICAL SPECIFICATION	
1	Main Power Supply	3 x 230/400 V±10 %, 47Hz – 63Hz	
2	Coverage Range	256 NM	
3	Blind Range	< 0.5 NM	
4	Antenna Gain (LVA-35)	> 27 dBi	
5	Antenna beamwidth (3 dBm)	2.2°	
6	Maximum altitude	min. 66000ft	
7	Altitude resolution (mode C/S)	25 feet (100 feet)	
8	Range Resolution	< 0.029 NM (54m)	
9	Azimuth Resolution (PRF = 450 Hz, Antenna revolution=15 RPM)	Two adjacent replies of the same target differ in azimuth of 0.2 degrees	
10	Revolution Period	Available RPM from 4.5 until 15	
11	Global Rate of Target Position Detection	> 98%	
12	Technology	Solid-state	
13	Interrogating Mode	1, 2, 3/A, C, 4, 5 level 1 & 2, S up to level 5	
14	Internal Interrogation Repetition (IRF)	Adjustable from 50 to 450 Hz	
15	Interrogator/receiver Side lobes suppression	ISLS, IISLS, RSLS	
16	Transmission Frequency	1030±0.01 MHz	
17	Receiver Frequency	1090±0.5 MHz	
18	Transmission Power	Min 64 dBm	
19	Transmitter duty cycle	SUM	6% Maximum Long term; 66% During P6, 32 ELM Pulses
		OMEGA	1% Maximum Long term
20	VSWR (max)	1.5:1	
21	Sensitivity	Better than -87 dBm @ SNR=8 dB	
22	Dynamic Range	≥ 80 dBm	
23	Bandwidth	≥ 16 MHz	
24	Fruit density	Min. 11,000 fruit/sec in the main lobe	
25	Modulation	DPSK,PPM, PAM, MSK	
26	Operating temperature range (outdoor parts of the equipment)	-40 °C to +65 °C	
27	Operating temperature range (indoor parts of the equipment)	-10 °C to +50 °C	
28	Output data format	ASTERIX Cat. 048, 034	

Night Diver Goggle NDG-87

General Description

Night Diver Goggle is a lightweight and high-performance underwater night vision goggle permitting observation both above and below water up to a depth of 30 meters, The assembly incorporates an IR-emitting light source that provides assistance in the close-up inspection of objects or checking underwater instruments. Night Diver Goggle can also be used for above water surface reconnaissance as well as underwater searching.

Features

- Light Weight.
- Ergonomic in design.
- Rugged construction.
- 18mm super generation image intensifier tube to offer crystal clear super bright viewing in visible and near-infrared.
- The capability of continuous, passive operation over 15 hours
- without battery replacement.
- Modular Construction.
- Comprehensive two-year warranty

Applications

- Nocturnal observation, target location, perimeter
- Surveillance, forward area observers, boarder patrols/customs and Special Forces
- Command and control.
- Terrain navigation
- Search and rescue
- Law enforcement, Drug control.

NVS 700 Night Vision Sight

General

The NVS700 night vision system is manufactured following military specifications to provide a military night time advantage for individual served weapons including rifles, light, and medium machine guns, rocket launchers, grenade launchers, and recoilless guns.

Main Features

- The rugged military design was built to withstand the harshness of a military environment.
- Optimum clarity by using individual controls for both intensifier and reticule brightness.
- Automatic Brightness Control permits use during an explosive fire, flare bursts, and continuous muzzle flash.
- Interchangeable reticule patterns to provide immediate sight
- adaptation to various weapons.
- Adjustable eyepiece focus to accommodate human eye differences.
- Daylight cover to allow daytime bore sighting.
- Operates on commercially available 1.5 V “AA” batteries for simple logistic support.

Standard accessories

1- 95mm objective w/adj. reticule
2- Objective daylight cover
3- Eye guard
4- Wrench All 5/32
5- Wrench All 3/16
6- Carrying bag
7- Storage case
8- Brush lens dusting
9- Lens peaper
10- 2AA batteries
11- Instruction manual

Options

- Weapon adapter as order (G3, M16, AK47 types are available)
- Various reticules as order (G3, M14 -M60, MG3, M2, M40 types are available)
- Monitoring and control system
- Observation handle

Model / Technical Specification	Monocular	Binocular	Panoramic	Biocular
Magnification	3.6X	2 x	2 x	3.6 x
Moon Light Recognition Range *	600 m	400 m	400m	600m
Star Light Recognition Range *	400 m	300 m	300 m	300 m
Moon Light Identification Range *	300 m	200 m	200 m	400 m
Star Light Identification Range *	200 m	100 m	100 m	200 m
Field of View	14.5°	14.5°	14.5°	10.8°
Objective Focal Length	95 mm	95 mm	95 mm	95 mm
T-Number	1.7	1.7	1.7	1.7
Focus Adjustment	25m to ∞	25m to ∞	25m to ∞	10m to ∞
Eye Piece Focal Length	26.5 mm	47.5 mm	47.5 mm	26 mm
Eye Piece Adjustment	-6 to +3 diopter	-2 fix diopter	-2 fix diopter	-6 to +2 diopter
Battery typ/Life	2xAA/72 Hour	2xAA/72 Hour	2xAA/72 Hour	2xAA/72 Hour
Image Intensifire Tube	25mm Inverter	25mm Inverter	25mm Inverter	18mm Noninverter
Operating Temperature	-50 to +52°C	-50 to +52°C	-50 to +52°C	-51 to +45°C
Nominal physical dimensions (LXD)	300x100 mm	365x100 mm	310x100 mm	260x150 mm
Weight	1.8 kg	2.8 kg	2.4 kg	1.4 kg

* For human target

NVS 800 Night Vision Sight

General

The NVS800 night vision system is manufactured following military specifications to provide a military night time advantage for crew-served weapons including rifles, light, and medium machine guns, rocket launchers, grenade launchers, and recoilless guns. It can be handheld or tripod-mounted for use by field observers to facilitate observation and aimed weapon fire at night.

Main Features

Rugged military design is built to withstand the harshness of a military environment. Optimum clarity is yielded utilizing individual controls for both intensifier and reticule brightness. Automatic Brightness Control permits use during an explosive fire, Flare bursts, and continuous muzzle flash.

Interchangeable reticule patterns to provide immediate sight adaptation to various weapons.

Precision machine interfaces for quick and accurate setup.

Adjustable eyepiece focus to accommodate human eye differences.

Daylight cover to allow daytime bore sighting.

Operates on commercially available 1.5 V “AA” batteries for simple logistic support.

Standard accessories

1- 155mm objective w/adj. reticule
2- Objective daylight cover
3- Eye guard
4- Carrying bag
5- Storage case
6- Brush lens dusting
7- Lens peaper
8- 2 “AA” batteries
9- Instruction manual

Options

- Weapon adapter as order (M2, M16, M85, M40, M139)
- Various reticules as order (M2, M40, M60, M85, M139)
- Monitoring and control system

NVS 900 Night Vision Sight

General: The NVS900 night vision system manufactured following military specifications long-range observation. It can be handheld or tripod-mounted for use by field observers to facilitate observation and aimed weapon fire at night. The GT901 goniometer and tripod is ruggedly constructed fully adjustable three-legged support on which wide range of battlefield sensors can be mounted

Main Features

- The rugged military design was built to withstand the harshness of a military environment.
- Optimum clarity by using individual controls for intensifiers.
- Automatic Brightness Control permits use during an explosive fire, Flare bursts, and continuous muzzle flash.
- Fix reticule patterns to find target and boresighting.
- Precision machine interfaces for quick and accurate setup.
- Adjustable eyepiece focus to accommodate human eye differences.
- Daylight cover to allow daytime bore sighting.
- Operates on commercially available 1.5 V “AA” batteries for simple logistic support.

Standard accessories

1- 256mm objective w/adj. reticule
2- Objective daylight cover
3- Eye guard
4- Carrying bag
5- Storage case
6- Brush lens dusting
7- Lens peaper
8- 2 “AA” batteries
9- Instruction manual

Options

- Gonio Tripod supports the NVS-900 for azimuth and vertical movements.
- The laser rangefinder can be mounted.

Technical Specification \ Model	Monocular	Binocular	Panoramic	Biocular
Magnification	9.7 X	5.4 X	5.4 X	9.9 X
Moon Light Recognition Range *	3600 m	2000 m	2000m	3600m
Star Light Recognition Range *	2400 m	1500 m	1500 m	2400 m
Moon Light Identification Range *	1800 m	1000 m	1000 m	1800 m
Star Light Identification Range *	1200 m	800 m	800 m	1200 m
Field of View	5.6°	5.6°	5.6°	4.0°
Objective Focal Length	258 mm	258 mm	258 mm	258 mm
T-Number	1.7	1.7	1.7	1.7
Focus Adjustment	75m to ∞	75m to ∞	75m to ∞	75m to ∞
Eye Piece Focal Length	26.5 mm	47.5 mm	47.5 mm	26.0 mm
Eye Piece Adjustment	-6 to +3 diopter	-2 fix diopter	-2 fix diopter	-6 to +2 diopter
Battery typ/Life	2xAA/72 Hour	2xAA/72 Hour	2xAA/72 Hour	2xAA/72 Hour
Image Intensifire Tube	25mm Inverter	25mm Inverter	25mm Inverter	18mm Noninverter
Operating Temperature	-50 to +52°C	-50 to +52°C	-50 to +52°C	-51 to +45°C
Nominal physical dimensions (LXD)	480X240 mm	545x240 mm	490 x160 mm	440 X240 mm
Weight	9 kg	10 kg	9.6 kg	8.6 kg

* For human target

NVS- 718 Night Vision System

General Description

The NVS night vision system is a rugged, portable, battery-operated, Electro-Optical instrument manufactured following military specifications to provide a military night time advantage for the individual served weapons including 5.45mm, 7.62mm rifles, and SVDN light and medium machine guns, rocket launchers, grenade launchers, and recoilless guns. It can be handheld or tripod-mounted for use by field observers. The 18mm 2+ generation image intensifier is used to create "near daylight" viewing conditions for the user to facilitate observation and aimed weapon fire at night. It amplifies reflected light, such as moonlight and sky glow so that the view scene becomes visible to the operator. The sight does not emit visible or infrared light (except through the eyepiece) that can be detected by the enemy. The superior performance of the image intensifier dramatically increases the overall range of the system.

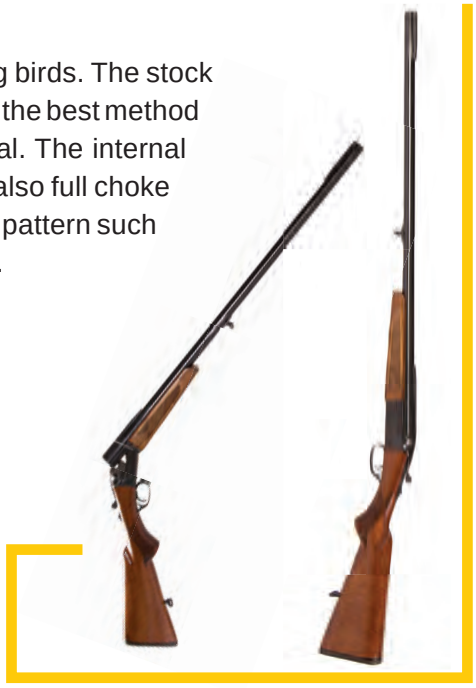
Features

- 18mm 2nd+ generation image intensifier tubes for maximum range and visibility.
- The rugged military design was built to withstand the harshness of a military environment. Optimum clarity under changing light conditions by using individual controls for reticule brightness.
- Automatic Brightness Control (ABC) permits use during explosive fire, flare bursts, and continuous muzzle flash.
- Interchangeable reticule patterns to provide immediate sight adaptation to various weapons.
- Adjustable vertical knob for firing at warm/cool weather.
- Precision machine interfaces for quick and accurate setup.
- Adjustable eyepiece focus to accommodate human eye differences.
- Daylight cover to allow daytime bore sighting.
- Operates on commercially available 3V battery for simple logistic support.

Shotgun “KAVEH 1”

Description

This is a single barrel break-action shotgun designed for hunting birds. The stock parts are made of walnut wood. The barrel is manufactured using the best method applied from German technology and the best possible material. The internal layer of the barrel is chrome plated to increase its shelf life. It is also full choke having a unique range and accuracy. Any decorative design and pattern such as wood carving and etching desired by customers are possible.



Technical Specifications	
Guage	12
Weapon total length	1250 mm
Height	183 mm
Width	40 mm
Barrel length	815 ± 2 mm
Weight	3.2 kg

Shotgun “KAVEH 2” (DSH)

Description

This is a double-barreled SxS break- action shotgun designed for hunting birds. The stock parts are made of walnut wood. The right barrel is half-choked for short ranges and the left one is full choke for long ranges. They are manufactured using the best method applied by German technology and from the best possible material. The internal layer of the barrels is chrome plated to increase their shelf life. Any decorative design and pattern such as wood carving and etching desired by customers are possible.

Technical Specifications	
Gauge	12
Total gun length	1135 mm
Height	190 mm
Width	58 mm
Barrel length	700 mm
Weight	3.7 kg

Shotgun “SHAHIN KAVEH” (VSHA)

Description

This is a double-barreled O/U break-action shotgun designed for hunting birds. The stock parts are made of walnut wood and a polyamide recoil pad is affixed to the buttstock. The barrels are designed as half choke for short ranges and full choke for long ranges and can be replaced by other standard chokes. They are manufactured, using the best method applied by German technology and from the best possible material. The internal layer of the barrels is chrome plated to increase their shelf life. Any decorative design and pattern such as wood carving and etching desired by customers are possible. By applying some modifications, this shotgun can be converted to a sporting type to be used in Trap and Skeet competitions.

Technical Specifications	
Gauge	12
Choke length	52 mm
Total gun length	1250 mm
Height	183 mm
Width	40 mm
Gun barrel length	700 mm
Weight	2.9 g

Shotgun “ARASH KAVEH” (SHA)

Description

This is a single-shot break-action shotgun for hunting birds. The stock and fore-stock are made of walnut wood. The gun barrel is made of the best material and the inside is covered with hard chrome to extend barrel life. The barrel is a full choke. The stock back screw, the range, and the accuracy are unique. Based on predefined designs, different etchings, woodcarvings, and gun covers can be chosen by the customer.

Technical Specifications	
Gauge	12
Total gun length	1150 mm
Height	185 mm
Width	40 mm
Barrel length	700 mm
Weight	2.7 kg

Shotgun “SAYYAD KAVEH” (SA2)

Description

This is a double-barreled O/U break-action shotgun designed for hunting birds. The stock parts are made of walnut wood and a polyamide recoil pad is affixed to the buttstock. The barrels are designed as half choke for short ranges and full choke for long ranges and can be replaced by other standard chokes. They are manufactured using the best method applied by German technology and from the best possible material. The internal layer of the barrels is chrome plated to increase their shelf life. Any decorative design and pattern such as wood carving and etching desired by customers are possible. By applying some modifications, this shotgun can be converted to a sporting type to be used in Trap and Skeet competitions.

Technical Specifications	
Gauge No.	12
The total length of the shotgun	1200 mm
Body material	Aluminum series 7000
Magazine	Tubular with a capacity of 5 shots
Barrel length	684 mm
Weight	2.3 kg

Shotgun “MARAL KAVEH”

Description

This is a single-barreled shotgun having a manual arming mechanism. The stock parts are made of walnut wood and the butt is attached with a recoil pad. The body is made of special aluminum used in aviation industries (7075 Aluminum Alloy) hardened via anodizing making the gun lightweight and rigid. The barrel is full choke and its internal layer is chrome plated to extend its shelf life.

Technical Specifications	
Gauge NO.	12 (internal dia . 18.3 mm± 0.2)
Barrel length	700 mm
Body material	Aluminum series 7000
Weight	2.9 kg
Magazine	Tubular with a capacity of 5 shots

Shotgun “SORENA KAVEH” (SPT)

Description

This is a sporting gun similar to the double-barreled O/U shotguns used in both Trap and Double Trap competitions. The stock of this gun is adjustable so that the shooter's cheek will be in the best position when shooting. The production technology of this gun is one of the best methods. To increase the shelf life of the barrel, the internal layer surface is chrome plated. The gun has also an automatic ejecting system and the choke is changeable.

Technical Specifications	
Gauge No.	12
Total length	1140 mm
Barrel length	710 mm
Weight	3.3 kg

Shotgun “Humak“(Sport)

Description

Humak R101 is the first sport shotguns entirely designed and manufactured in I.R.IRAN for Olympic Trap Shooting.

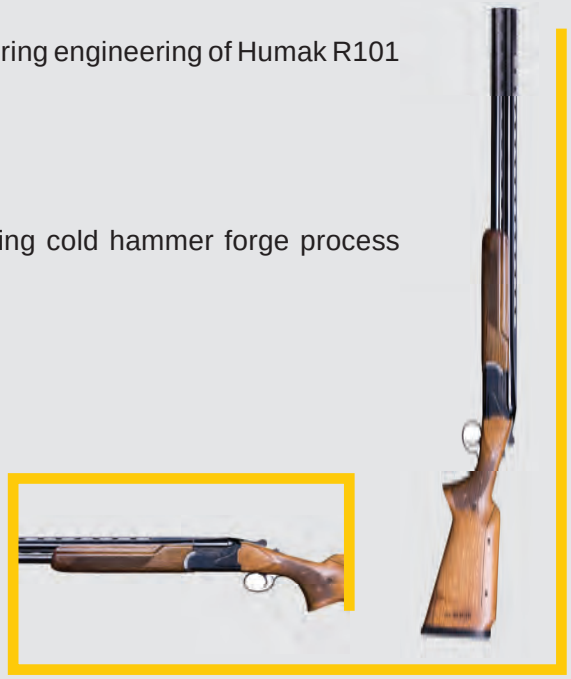
The most important objectives in design and manufacturing engineering of Humak R101 among other technical considerations are as follow:

Precise calibration of POI and POA

Proper trigger system functionality

Perfect barrel quality and durability.

Humak R101s barrel is coated by hard chrome utilizing cold hammer forge process which assures durability and precision of the barrel.



Technical Specifications	
Barrel length	750 mm
Barrel weight	1550 mm
Chamber length	70 mm
Total weight	3900 g
Rib	10x10 mm
Choke	fixed 150 mm
Stock	adjustable
Ammunition	12 gauge
Length of cartridges	70 mm after shot

Shotgun “Uz Pump Action“

Operation of the shotgun:

The shotgun is equipped with a 5 shotshells magazine and can cover radially 60 cm in diameter at a distance of 25 meters. This hunting shotgun is armed by pulling the forestock backward and forward with the force of the hand. The capacity of its magazine tube is 1 + 5 cartridges that a shotshell is loaded in the loading chamber. There are different types of ammunition to be used in this shotgun. For example, one can use ammunition that is loaded with thousands of pellets rather than ammunition with less than 100 pellets.

The weight of pellets or shotshells is also important, as, at the same conditions, the different spread of shotgun will be observed.

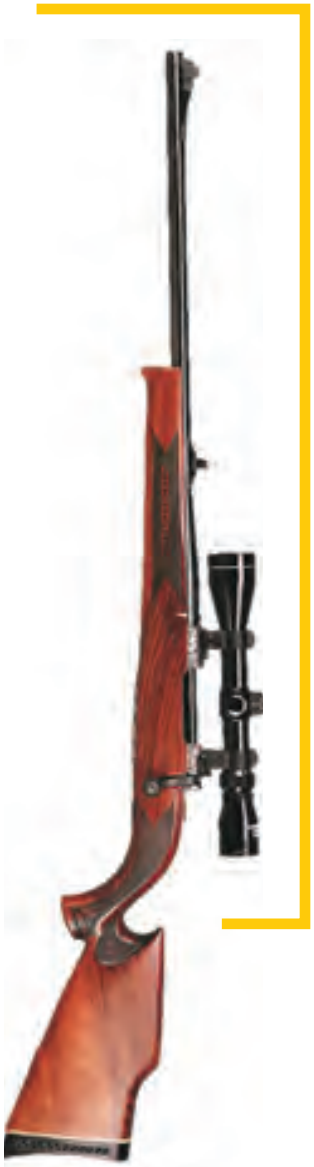
Technical Specifications	
Gauge	12
Body	Aluminum Series 7000
Magazine	A tube with a capacity of 5 cartridges
Buttstock and forestock	Polymer
Barrel length	700 mm
Weight	3000 gr

Nakhjir 3 - GSH

Nakhjir 3 is a well and ergonomically designed rifle for hunting quadruped animals. The barrel is made of stainless steel (1/7765) and has 4 right-hand riflings and is typically supplied with a 270 win caliber and is available with 30 - 06, 308 wins, and 8 x 57 calibers.

This rifle has abutted stock made from walnut wood, a three-position safety, and full equipment of aiming the target, including an adjustable slot and rear sight front sight, and mounting devices for rifle receiver. The weight of a weapon, without a receiver and its front and rear fascia, is about 3.900 kg and its length is 1.125 meters. The weapon has a magazine with a capacity of 5 cartridges.

Technical Specifications	
Caliber	270 win (30 – 06, 308 win, and 8 x 57 if ordered)
Magazine capacity	5 Bullets/rounds
Total weight	3.900 gr
Overall length	1125 mm
Height	165 mm
Effective range with the receiver	700 m
Effective range without a receiver	300 m
Ultimate Range	3000 m



Tondbad Air Rifle (4.5 mm)

TONBAD is a break air rifle with rear sight adjustable for elevation and Travers and is designed for sport shooting.
It can be equipped with an optical sight. The buttstock is a rubber.

Technical Specifications	
Caliber	4.5 mm
Muzzle velocity	160 m/s
Length of barrel	456 mm
Length of overall	1015 mm
Weight	2750 gr

ARTA air rifle (4.5 & 5.5mm)

The TONBAD is a break air rifle with rear sight adjustable for elevation and Travers and is designed for sport shooting.
It can be equipped with an optical sight. The buttstock is either rubber or wood.

Technical Specifications		
Caliber		4.5 & 5.5 mm
Muzzle velocity	cal. 4.5	250 m/s
	cal. 5.5	250 m/s
Muzzle energy	cal. 4.5	16 j
	cal. 5.5	24 j
Length of barrel		450 mm
Length of overall		1100 mm
Weight		3.0 kg
Number of rifles		12 right hand
Type of action		Break barrel

OGHAB Cartridge (Star Crimped & Flat)

The cartridges including plastic - body shotgun shell filled with lead shots and star crimped and flared with paper or plastic.

Specifications		
Type	Star Crimped	Flat
Gauge	12/70	12/70
Wads	Plastic	Plastic
Lead Weight	30 - 32-34-36 gr	30-32-34-36 gr
Shot Numbers	00-0-1-2-3-4-5-6-7-8	00-0-1-2-3-4-5-6-7-8
Average Velocity	385 m/s	385 m/s
Pcs Per Box	25 Rounds	25 Rounds
Pcs Per Carton	200 Rounds	200 Rounds

OGHAB & SHAHIN Cartridge (Steel Shot & Star Crimped)

The cartridges include plastic - body Shotgun shell filled with Steel shots and star crimped.

Specifications		
Type	Oghab(Steel Shot)	Shahin (Star Crimped)
Gauge	12/70	12/70
Wads	Plastic	Plastic
Lead Weight	30-32-34-36 gr	30-32-34-36 gr
Shot Numbers	1-2-3-4-5-6	00-0-1-2-3-4-5-6-7-8
Average Velocity	385 m/s	385 m/s
Pcs Per Box	25 Rounds	25 Rounds
Pcs Per Carton	200 Rounds	200 Rounds

Navak Cartridge (Skeet & Trap)

The cartridges used for sporting the case and wads are plastic and filled by lead shots.

Specifications		
Type	Skeet	Trap
Gauge	12/70	12/70
Wads	plastic	plastic
Lead Weight	24 gr	24 gr
Shot Numbers	9	7.5
Average Velocity	385 m/s	385 m/s
Pcs Per Box	25 Rounds	25 Rounds
Pcs Per Carton	200 Rounds	200 Rounds

Sporting Cartridge

Technical Specifications		
Description	Specifications	
Type	TRAP	SKEET
Wads	Plastic	Plastic
Case length	70 mm	70 mm
Base Height	12.9 mm	12.9 mm
Shotshells	24 gr	24 gr
Shotshell Numbers	9.5	9
Muzzle Velocity	385-415 m/s	385-415 m/s
Max Gas Pressure	P< 650 bar	P< 650 bar
Packing	25 pcs box	25 pcs box

Shotgun w Cartridge (Gauge 12)

Technical Specifications				
Description	Specifications			
Type	Star	Flat	High Pressure	High Charge
Wads	Plastic	Plastic	Plastic	Plastic
Case length	70 mm	70 mm	70 mm	70 mm
Shotshells	34 gr (00-8)	32 gr	37 gr	37 gr
Shotshell Numbers	00 - 8	00 - 8	5 - 6	5 - 6
Muzzle Velocity	385 m/s	385 m/s	370 m/s	370 m/s
Max. Gas Pressure	P< 650 bar	P< 650 bar	P< 845 bar	P< 745 bar
Packing	25 pcs box	25 pcs box	25 pcs box	25 pcs box

Anti-Riot Cartridge Rubber Shot

Technical Specifications	
Description	Specifications
Type	Gauge 12
Wads	Plastic
Case length	70 mm
Base Height	12.9 mm
Shot weight	4.8-5.6 gr
Number of Shot	12-14
Muzzle Velocity	370-410 m/s
Max. Gas Pressure	P< 650 bar
Packing	25 pcs box
Shot Material	Rubber

8×57 Cartridge

The case is rimless and Bottlenecked of brass, and Berdan or boxer primed. The bullet is a soft point.

Specifications	
Muzzle Velocity	830 m/s
Bullet Weight	150 grain
Type of bullet	SP(soft point)
Type of case	Brass
Propellant Powder	Double Base
Primer	Berdan

270 Win Cartridges

This cartridge was developed commercially as hunting round by the Winchester company. The case is of brass, bottlenecked and Boxer or Berdan Primed. The Bullet is led core with a brass jacket.

Specifications	
Muzzle Velocity	820 m/s
Bullet Weight	150 grain
Type of bullet	SP(soft point)
Type of case	Brass
Propellant Powder	Double Base
Primer	Berdan

7.92× 57 Cartridge (Berno/Mauser)

The cartridge became the standard German rifle (M1) machine - Gun cartridge. This round has a rimless, bottlenecked case with Berdan priming. The case is made of brass.

Specifications	
Muzzle Velocity	735 m/s
Bullet Weight	12.8gr
Type of bullet	Ball - FMJ
Type of case	Brass
Propellant Powder	Double base
Primer	Berdan

Hunting Powder

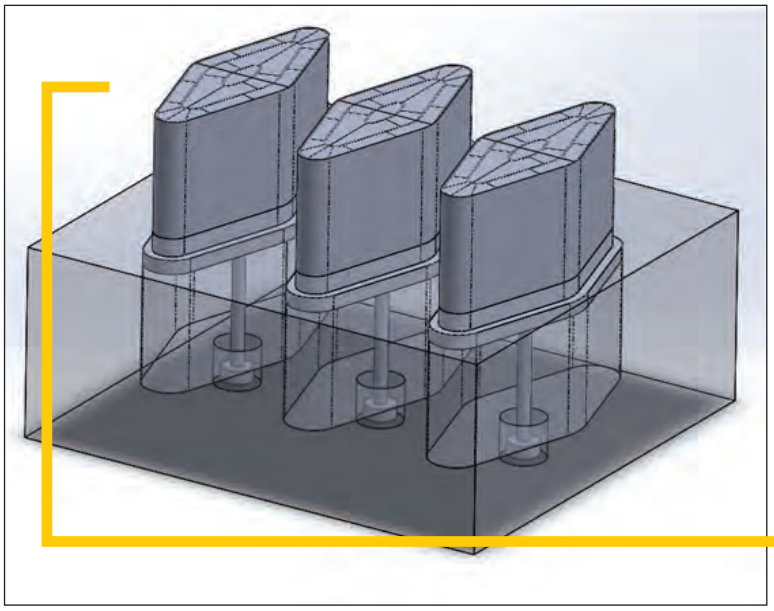
Hunting powder is a kind of single-base powder containing NC, DPA, and Centralite. This powder is used for Hunting 12/70 cartridge.

Technical Specifications	
Length	1.5 - 2.2 mm
Thickness	0.25-0.35 mm
Width	1.3-1.5 mm
Total volatiles	MAX. 1.3 %
Stability at 134.5°C	> 60 min
Heat of explosion	1000 ± 50 cal/gr
Charge weight	1.6-2 gr
Velocity	385 ± 15 m/s
Mean pressure	≤650 bar

Security Steel Structure

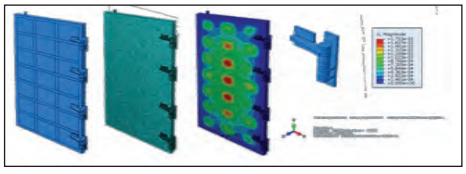
Security protection

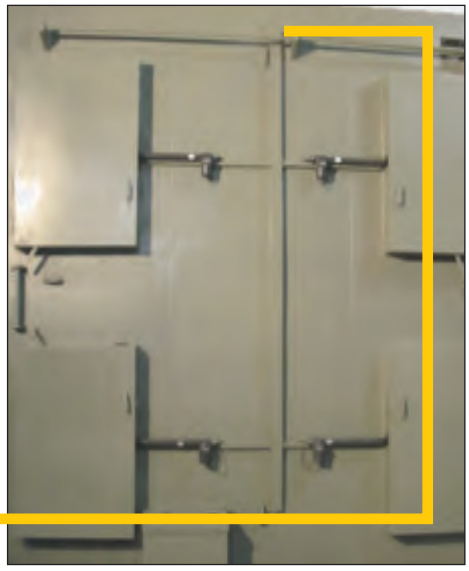
Security Steel Structure Barrier (SSSB) for protection of important places, to prevent car bombed events. The SSSB designed can prevent a vehicle weighing 15 to 20 tons with a speed of 120 km/h carrying 200 kg T.N.T explosives at the required distance from the entrance.



Explosion-proof doors

The Company has designed explosion-proof doors that can withstand the explosion wave.
The door could be operated hydraulically or electrically.





Security Gate

This product governmental organization consulates commercials and high-security areas that need to be used to prevent suicide attacks.

Specifications:

- Equipped with warning lights.
- Equipped with electronic eyes.
- Equipped with remote.
- Deterrence of at least 70 tons and a speed of 100mph.
- Equipped with intelligent control systems and hydraulic systems in the shortest time to 6 seconds.
- The maximum height of 1 m.
- The maximum length of 6m.
- Power requirements: 3-phase devices.

Rubber Lining Balmills and Rod Mills

Lining Mill

Today achievements in technology cause change inlining of the mills. Stone and steel lining used in most mines, factories of tile, porcelain, and ceramic mills have been changed to rubber lining with unique features. Tire Manufacturing Industry is the most valid and largest industrial unit in IRAN which designs and manufactures the lining mill. Lining Mill parts of the complex are designed with old and new (i.e. Alvand) methods.

Producer Industries of gold, copper, lead, zinc, silica, tiles which are somehow associated with the lining mill use different linings according to their efficiency, to increase the lifetime of the mill lining and to protect the internal body of the mills following working conditions.

The most significant ones are

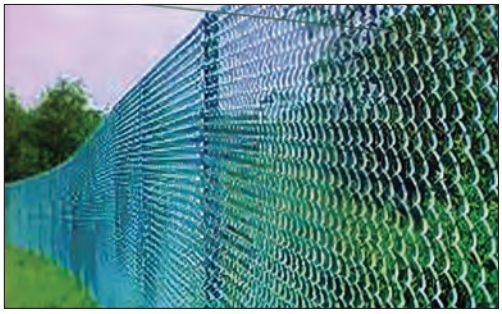
1 Rubber lining 2 stone lining 3 steel lining 4 cast iron lining 5 plastic with compound ceramic lining Nowadays the advancement of technology has made it possible to manufacture rubber linings which have major benefits, both having an increase in the volume of the mill to load more material, and the low weight of the lining, which leads to high demand to convert other types lining into rubber one. After so many years of effort, DIO can meet the demands within the country by relying on its own highly experienced staff, modern equipped laboratories, and scientific center, to compete easily with foreign products.

Barbed Wire Fence

One of the major bases of security fencing is the use of barbed wire above and at the central part of a fence or a chain-link fence. Not only does the use of barbed wire increase security, but also it enhances its beauty. To use barbed wire at the top of any fence, the first step is the choice of the proper type of barbed wire and then its installation. Barbed wires are categorized into two main types flat and curved. The flat barbed wire is a galvanized wire which is manufactured with sharp edges or points arranged at intervals along the strand(s). The curved barbed wire has two types: the common type which is a line razor barbed wire and the hot-dipped galvanized razor wire.

Fencing and Chain Link Fence of Gardens

The cutting and manufacturing of the posts, creating a concrete and tubular foundation and installation of the preservative containers for chain link fence, making of the fence frame and installing the chain-link fence and barbed wire, painting of all frames, and fences would be accepted before the site visit. Also, fence installation would be done in structures that are under construction to avoid falling of people and construction materials.



SMART BORDER SURVEILLANCE DEPARTMENT

Intelligent Surveillance Sensors (ISS-ECI)

• Ultra low power, wirelessly networked
• The unattended ground sensor system
• Reliable detection and classification of people, vehicles, and activity of interest
• Innovative auger screw design for rapid deployment into a variety of terrains

Specification

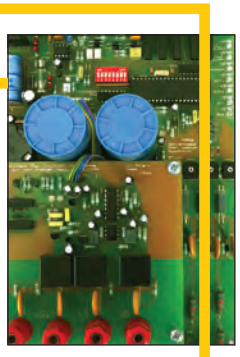
Function: Detection and classification of dismounted personnel and vehicles

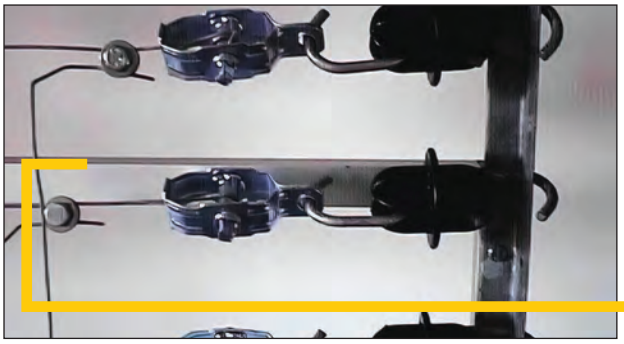
Features:

• Superior detection with a very low false alarm rate
• More than six months of battery life in a self-contained package Easy-to-camouflage sensor node that can be buried
• Easy to Install and operate
• Self-healing and self-configuring Network
• Self-locating, no field programming required
• Non-line-of-sight (NLOS) communications
• Low probability of detection/intercept with anti-jamming features

Performance:

• Frequency: 433 MHz
• Temperature: -20 to 80 degrees Celsius
• 90 percent Humidity
• Detection Range up to 30 meters for personnel and up to 100 meters for vehicle • Communication Range (to gateway) up to 5 km
• System Probability of Detection 0.95 (cumulative)
• Powered by a Lithium
• Thionyl Chloride or Li-SOCI2 Battery



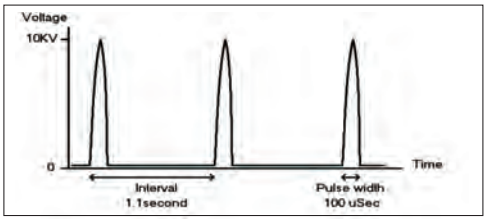


Electro- Fence

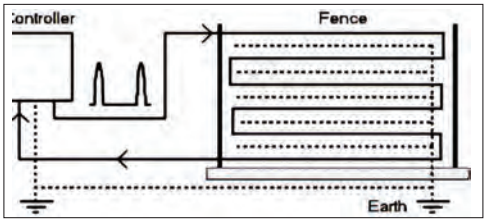
Electro- Fence HV and LV Fence System Features

Detects/Denies access

- Purpose: Built for intrusion detection with active deterrence
- Gives a "Short Sharp Safe Shock"
- The system develops a pulse of energy.
- Connected to an energizer that fully complies
- with BS EN 60335-2-76 not to exceed 5 joules of
- the energy measured on a
- 500-ohm load.
- Systems installed to BS 1722 part 17



Pulse Diagram



Electro-Fence System

- The system comprises a grid of high tension parallel wires.
- A pulse goes out on a series loop returning to the control unit which monitors the pulse

Fence Mounted

Palisade Installation

Alarm Monitoring

- Alarm Threshold Typically = 3kv
- Number of Missing Pulses = 2

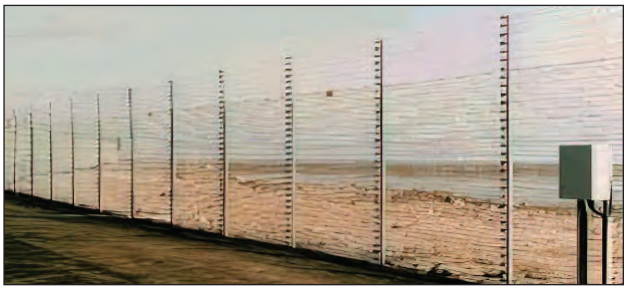
LV System Features

- Cut Wire and Short Wire Detection.
- Can be used stand-alone or with the HV system.
- Full Integration with HV Controllers and Multisys.
- Low Voltage Fence Integrity Monitoring.
- Very Secure System - does not use DC on the fence
- which is easily defeated.
- Uses an AC tone, 6V peak to peak signal.

Fence Mounted

Typical Configuration

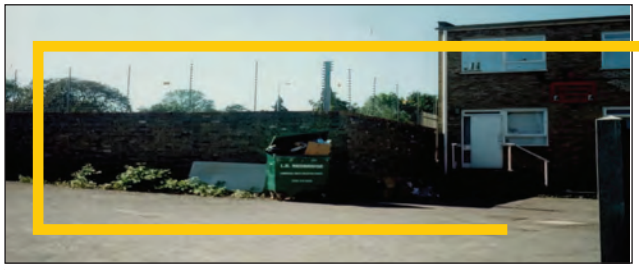
- Fence Mounted
- Free Standing-Full fence
- Wall
- Roof Topping
- Standard Security Controllers
- Electro-Fence Single Electro-Fence
- Dual LV Fence Monitoring



Weldmesh Installation


Typical Free Standing Installation


Typical Roof Mounted Installation




Typical Wall Mounted Installation

Standard Security Controller Features

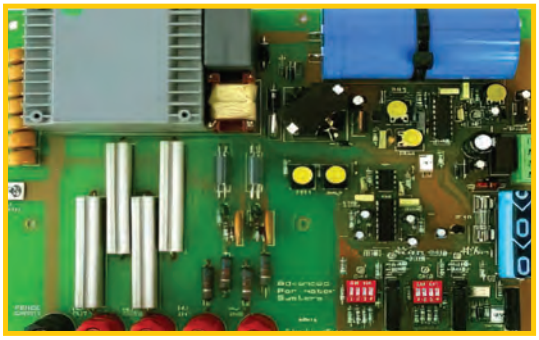
• Shock Monitoring:
Alarm generated when an intruder receives a preset number of consecutive shocks.
• Voltage Monitoring:
If an intruder tries to reduce the fence voltage an alarm is generated.
• Cut Monitoring:
Alarm generated when wires are cut.
• Short Circuit Monitoring:
Alarm generated when wires are short-circuited

High-Security Controller Features

Fence Wired as 2 loops - High Voltage & Low Voltage

High-Security Controller Features

The High-Security controller constantly monitors all the earth wires. High voltage can be switched off but the fence is still monitored.



Additional Monitoring Features

• Earth Wire Cut.
• Earth Wire Short to Live Wire.
• Earth Wire Short to Ground.

Alarm Outputs Voltage Free Contacts.

Simple interface to commercially available intruder alarm panels, CCTV and access control systems

High-Security Controller Features

The High-Security controller constantly monitors all the earth wires. High voltage can be switched off but the fence is still monitored.

Alarm outputs voltage free contacts.

Simple interface to commercially available intruder alarm panels, CCTV and access control systems

Gates

High Voltage Contact detects gate opening

Insulators

- Low loss black UV resistant
- Water Barriers (no wire overlap)

Intermediate Insulators - Very Effective Water Barrier

The High-Security controller constantly monitors all the earth wires. High voltage can be switched off but the fence is still monitored.

Flexitop

Flexitop consists of a 1.5m spring steel post. 16 high tensile steel wires.

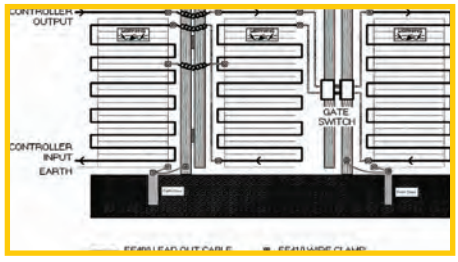
One wire is attached directly to the top of the post.

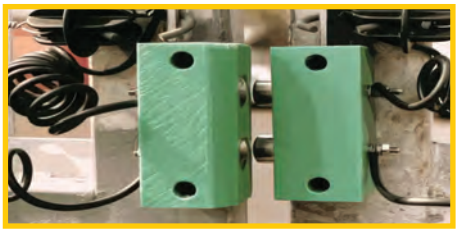
Flexitop is fixed to the outside edge of the fence with 5 wires below the top of the fence.

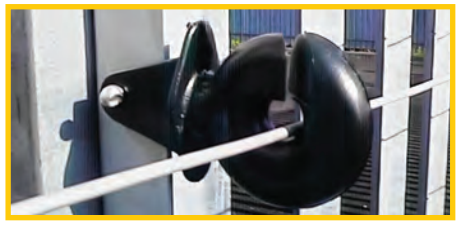
Flexible topping creates a very unstable environment making it difficult to climb up.

Flexitop

For High-Security Applications







End Insulators - Very Effective water Barrier No Overlapping Wires

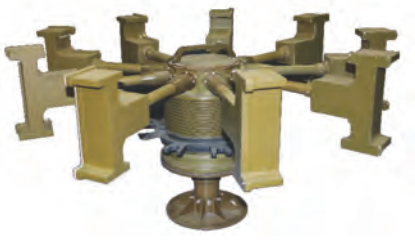
EAGLE-C Compact V/UHF Direction Finder VRF-141

General Description

The EAGLE-C is designed to find the direction of signals in 110-1200 MHz. The system includes a compact receiver that can be used in operations and tactical applications. Both the processing module and receiver module are placed inside the antenna and the processed information is transmitted to the server only by one network cable. The setup time of the system is very short and the system antenna is designed to be folded. The system can demodulate FM and AM signals of 1 to 250 kHz bandwidths. The system includes an auto-intercept mechanism in which it monitors and saves automatically the parameters of various received signals. The sensitivity and stability are qualified based on the standards and it works with the correlation interferometer algorithm to find the direction of signals. The receiver bandwidth is 10MHz and it can find the direction of the wideband signals whose frequencies are 10MHz or less.

Features

- Detection of analog and digital fix frequency sources
- Correlative interferometry algorithm
- 9-element array along with two-channel receiver structure
- Detecting airborne and ground-based communication
- Narrowband and wideband modes
- Detection of the weak signal using an average algorithm
- The sweeping speed is about 2000CH/sec
- Full band DF accuracy is better than 2°RMS
- Reporting, saving, filing, and recording the information
- Close channel recognition and direction-finding
- The system is tactical and installation time is less than 30 minutes
- Immediate selection and processing of signals
- Various features in spectrum plot (averaging, video resolutions, bandwidth resolution)
- Manual gain control
- Remote control



A.3 Bullet Resistant Glass

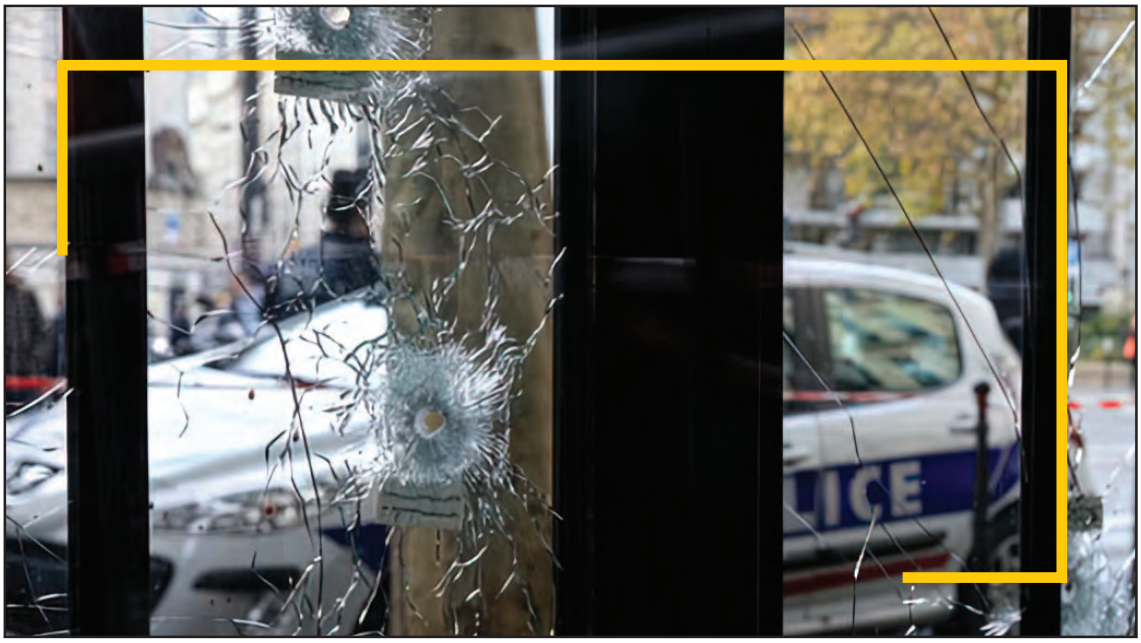
Bullet resistant glass is a laminated composite of asymmetrical glass-clad polycarbonate specialty designed to protect against different levels of ballistic threat from 9mm handgun to armor-piercing rifles. This product can be applied for armored vehicles, buildings, and construction and other application. Additionally, the bullet-resistant glass may include various glasses, such as low-iron glass, printed glass, color glass, heating (defog) glass, sand-blasted glass, stained glass, etc.

Applications:

- Protecting Government Buildings, Museum, Bank, VIP Buildings
- Providing Protection to Diplomats and Politicians
- Emergency and Public Safety Vehicles Ambulances and Fire Engines
- Cash-in-Transit Vehicles
- Civil Defense Vehicles
- Military Vehicles

Main Features and Advantages

- None-spilling
- Tested to meet different levels of standards
- Maximum transparent and minimum distortion
- Different size, shape, and color
- Moisture protective edge for long service life in extreme weathers
- Flat and bent according to customer request



Selection of Protection Level

Level of protection can be selected according to weapon type, ballistic threat, and ammunition. For example for Kalashnikov (AK47) weapon with 7.62x39 calibers by lead core and copper jacket of the bullet, we must have B5 level from CE 1063 and its same level in other standards based on next tables.

Classification and requirements for IGP 'No Spall' bulletproof glass				
Categories of resistance	**Type and caliber of arms used**	**Application**	**Thickness (mm)**	**Weight (kg/m2)**
BR1	rifle 0,22 LR	public administration buildings, mansions	14	27
BR2	gun 9 mm Luger		17	34
BR3	gun 0,357 Magnum 39	telecommunication and computer operators	19	39
BR4	gun 0,44 Magnum		27	55
BR5	rifle 5,56	buildings open to high risk of terrorist attacks or robbery, cashiers' compartments	34	72
BR6	rifle 7,62	military facilities, penitentiaries	42	88
BR7	rifle 7,62	military facilities and other high risk facilities	79	173