

ANTI TERRORIST

Based on electromagnetic detection and perception technology, high-power electromagnetic pulse generation and synthesis technology, integrated AI algorithm, and focusing on user's demand, Novasky developed a full range of Wall penetration radars including one-dimensional ranging radar, two-dimensional positioning radar, three-dimensional imaging radar, and long-distance wall penetration detection radar to provide multi-dimensional and multi-scenario application solutions for counter terrorism tasks. The through wall radar series products has ability of strong penetration, accurate target positioning, attitude recognition, multi-dimensional detection, structural inversion, situational awareness, split-screen display, ultra-portable and other advantages, which are widely used in counter-terrorism, military street fighting, and hostage rescue, arrest criminals, border inspection, tactical research and training and other fields.



CHAPTER 01

 Through-Wall Detection



Hand-held Ranging Through Wall Radar CEM100

PRODUCT OVERVIEW

CEM100 handheld through wall radar is a vital sign detection device based on UWB radar technology and biomedical engineering technology. This product has the advantages of small size, light weight, easy to carry, and supports wireless remote control. It can detect multiple targets behind wall or in building ruins, and display the target distance in real time, which is widely used in emergency detection and search tasks in special industries such as firefighting, armed police, border defense, street fighting to achieve rapid target search and positioning.

PRODUCT FEATURES



Ultra-portable Design

Light weight and compact, hand-held fit design



High Penetration Performance

Able to detect live object behind wall/barrier of common material



Safety Design For Operator

Wireless remote control for detection and display, stand-alone screen supports tactical application for long-playing monitoring and synergetic observation



High Real Time Performance

Real-time detection & display of moving and static targets



Simple User Interface

Provide clear and intuitive detection results for strategy making



Military-industrial Design

Comply with GJB150A-2009 design standard, meeting the mission requirement in maximum Condition

SPECIFICATIONS

Device Type	Hand-held through wall radar
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Range	30m
FOV	120°
Display Mode	Presence of static & moving targets, quantity and real-time distance
Weight	≤0.8kg (including battery)
Protection Grade	IP67
Power Supply	Lithium battery
Durable Working Time	≥3h
Dimension	≤255mm×95mm×55mm
Wireless Operation	Built-in wireless module, support remote display

Hand-held 2D Through Wall Radar CEM120

PRODUCT OVERVIEW

Hand-held 2D Through Wall Radar CEM120 is a vital sign detection device by integrating UWB radar and biomedical engineering technology. This product can penetrate obstacles such as building walls and obtain information such as the location and numbers of human targets behind it in real time. It has the characteristics of strong penetration, small and portable, and can be controlled with one hand. It is widely used in penetrating reconnaissance scenarios such as counter-terrorism, hostage rescue, urban street fighting, and border inspection.



SPECIFICATIONS

Device Type	Hand-held 2D through wall radar
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Information	target two-dimensional coordinates, target number, dynamic/static state, one dimensional waveform and interior structure layout
Display Mode	Supports 1.5D, 2D
Detection Range	40m
FOV	≥120°
Multi-target Detection	≥3
Durable Working Time	≥4h (two battery)
Power Supply	Type-C interface for charging and supports internal or external battery charging
Dimension	≤255mm×105mm×38mm
Weight	≤0.8kg (including battery)
Optional Accessory	Bracket, handheld display and control terminal, wired connection cable, carrying bag

PRODUCT FEATURES

Portable Design

small in size and light in weight, suitable for one-handed control

High Penetration Performance

Able to detect live object behind wall/barrier of common material

Multi-target Real-time Positioning

multiple targets can be located at the same time, moving and static targets can be tracked and displayed in real time

High Real-time Performance

real-time tracking and display of moving and static targets

Remote Control

The handheld display and control terminal can be remotely controlled through a wired or wireless connection to the radar to reduce the risk of exposure

User Friendly Design

the display and control platform is simple and intelligent to operate; it uses Type-C interface for charging, which is convenient and practical





PRODUCT FEATURES

Highly Portable Design

Light and compact, support knapsack pack

High Positioning Accuracy

Ultra wide bandwidth, MIMO architecture, high resolution design, more accurate positioning

High Penetration Performance

Able to detect live object behind wall/barrier of common material

Multi-targets Detection

Simultaneous detection and display of ≥ 5 targets

Indoor Layout Mapping

Building internal structure and layout mapping assist in situation analysis and awareness

Military-industrial Design and Environment Suitability

Comply with GJB150A-2009 design standard, meeting the mission requirement in maximum condition

Safety Design For Operator

Wireless remote control for detection and display, stand-alone screen supports tactical application for long-playing monitoring and synergetic observation

SPECIFICATIONS

Device Type	2D through wall radar
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Range	30m
FOV	120°
Display Mode	Presence of static & moving targets, quantity and real-time location, data playback and wireless remote display
Multi-target Detection	≥3
Weight	≤3.2kg (including battery)
Power Supply	Lithium battery
Durable Working Time	≥4h
Dimension	≤340mm×248mm×130mm
Wireless Operation	Built-in wireless module, support remote display and control distance:150m

Portable Two Dimensional Positioning Through Wall Radar CEM200

PRODUCT OVERVIEW

CEM200 is a rugged and compact 2D through Wall Radar designed for fast detection and tactical entries. It provides necessary situational intelligence within a room in time by quickly scanning the inner structure and accurately analyze the target location, numbers and layout. The product adopts MIMO ultra-wide band radar system, with function of high resolution in long-range, multi-target detection, and real-time two-dimensional positioning. CEM200 has the advantages of high protection level, small size, light weight, easy to carry, good penetration, fast response, support for split-screen display, and can be used by a single soldier, which is widely applied for variety of emergency search tasks include but not limited to street fighting, counter terrorism, hostage rescue, border security, etc.

High Accuracy Two Dimensional Through Wall Radar CE200

PRODUCT OVERVIEW

CE200 through-wall radar is a high-performance human target search device launched by Novasky. The working principle is based on Doppler effects generated on the radar echo by weak movements such as human respiratory heartbeat, body shaking, limb swinging, and utilize radar signal processing algorithm to analyze and calculate the target position information behind obstacles. The product adopts the MIMO ultra-wide band radar system, which has the functions of high resolution in long-range, multi-target detection, and real-time two-dimensional positioning. It can quickly obtain the number and layout of targets behind walls and other obstacles, and is widely used in national defense and military, public security, armed police, border defense and other fields for target search tasks.



SPECIFICATIONS

Device Type	Two-dimensional positioning through wall radar	
Detection Mode	Two-dimensional positioning for both static and moving targets at the same time	
Numbers of Detected Targets	≥5	
Penetrated Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects	
Through-wall Detection Distance	30m	
Detection Angle	120°	
Remote-control Distance	In open spaces: ≥150m	
Operating System	Android	
Dimension & Weight	Components	Radar Host
	Size	≤630mm×330mm×170mm
	Weight	≤5.8kg (including battery)
	Durable work time	≥8h

PRODUCT FEATURES

Two-dimensional Positioning

Accurately position the two-dimensional coordinates of targets, greatly improve rescue efficiency

Multi-target Detection Function

Simultaneous detection and display of ≥ 5 targets

Strong Penetrating Performance

Able to detect live object behind wall/barrier of common material

Strong Adaptability to Environment

Work in all time, no matter daytime or night
Work in all weather, no matter rain, haze, snow and ice or swirling dust

High Real-time Performance

Detect and display the moving targets in real time

High Positioning Accuracy

Ultra wide bandwidth, MIMO architecture, high resolution design, more accurate positioning



Three Dimensional Imaging Through Wall Radar CEM400

PRODUCT OVERVIEW

CEM400 is a 3D Imaging through wall radar, majored for gathering real-time and accurate intelligence of live objects from behind solid walls or barriers to help the mission executor determining the necessary tactical planning with crucial information including life presence of both moving and static target, target location, target numbers, target moving path, internal structure of the building. CEM400 delivers mission-critical information when and where it is needed, providing unprecedented situational awareness, which can effectively reduce the risk of casualties of combat personnel, conduct tactical assaults, and improve the combat missions success rate. It is applicable for a variety of emergency search and high risk combat mission carried by police, armed forces, law enforcement agencies, search and rescue organizations, etc.



SPECIFICATIONS

Device Type	3D through wall radar
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Range	30m
FOV	120°
Detection Mode	Real-time 3D positioning and imaging, simultaneous detection of moving and static multiple targets
Multi-target Detection	≥5
Weight	≤7.5kg (including battery)
Power Supply	Lithium battery
Durable Working Time	≥4h
Dimension	≤540mm×520mm×120mm

PRODUCT FEATURES

3D Imaging and Intelligent Situation Perception

Provides three-dimensional coordinates and target status, real-time display of single target and multi-target in static or moving

Indoor Layout Mapping

Building internal structure and layout mapping assists in situation analysis and environment awareness

Safety Design For Operator

Wireless remote control and display for stand-off operation, improving the security of operator

High Penetration Performance

Able to detect live object behind wall/barrier of common construction material

High Real Time Detection & Display

Quick start detection and display of both moving and static live target in real-time

Military-industrial Design

Protection level, anti-dropping, high-low temperatures performance is comply with GJB150A-2009



Portable Three Dimensional Imaging Through Wall Radar CEM420

PRODUCT OVERVIEW

CEM420 3D through wall radar is a vital sign detection device based on UWB radar technology and biomedical engineering technology. This product can penetrate obstacles such as building walls, and obtain real-time information such as 3D imaging, position, posture, and quantity of human targets behind it. Featured with strong penetrability, good portability, high positioning accuracy, long detection distance, and intelligent posture recognition, CEM420 is widely used in penetrating reconnaissance scenarios such as counter-terrorism, hostage rescue, urban street fighting, and border inspection.



SPECIFICATIONS

Device Type	MIMO architecture 3D imaging through wall radar
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Range	≥50m
FOV	120°
Detection Mode	Real-time 3D imaging, posture recognition, positioning, target number display, indoor structure inversion, simultaneous detection of moving and static targets
Operation Method	Can be carried on soldier's back, or easily hand-held for detection
Remote Display & Control	Support
Battery Life	≥4h
Remote Display and Control Distance	≥100m
Charging Method	Use GAN fast charging charger Type-C interface to charge, support built-in or external battery charging
Radar Size	≤400mm×400mm×45mm (handle folding size)
Radar Weight	≤4.2kg (including battery)

PRODUCT FEATURES

Good Portability

Small size and light weight, suitable for individual carrying and manipulation

Wireless Control

Supports wired or wireless control to reduce the risk of exposure

Multi-target Real-time Positioning

Multiple targets can be located at the same time, and dynamic and static targets can be tracked and displayed in real time

Posture Recognition

Real-time acquisition of target dynamic and static status and posture information such as standing, sitting, squatting, lying

3D Imaging

With three-dimensional general imaging and positioning capabilities

Friendly Human-computer Interaction

Easy to operate, simple and intuitive interface



Long-distance Wall Penetration Detection System CEV210

PRODUCT OVERVIEW

The long-range wall-penetrating radar system consists of an unmanned vehicle, a long-range wall-penetrating radar, an optical video, an infrared thermal imager, a navigation and positioning instrument and a ground terminal. Adopting low-frequency ultra-wideband MIMO radar technology system, it has the advantages of convenient movement/deployment, long detection distance and wide coverage, and can penetrate obstacles such as building walls at a long distance, detect and perceive the number of people behind the obstacles, their distribution, and the key building structure, etc. It can effectively improve the target perception capability under non-visible conditions, and is applicable to urban street fighting, anti-terrorism and raid handling, hostage rescue and other special scenarios under the environmental Sensing tasks.



SPECIFICATIONS

Equipment type	long-distance wall-penetrating radar detection system
Detection distance	≥20m (10-50m from building wall)
Detection accuracy	azimuth ≤ 1m, distance ≤ 0.5m
Number of multiple targets	≥3
Radar host weight	≤15kg
Radar host size	≤1100mm×500mm×150mm
Remote display and control	Built-in wireless module, remote display and control under visual distance ≥100m or 500m (optional)
Optional configuration	unmanned vehicle platform, tripod

PRODUCT FEATURES

Quick Scan

Able to scan 10~50m away from the target area scanning, a single scan range of hundreds of square meters

Strong Adaptability to Environment

Common non-metallic building wall materials
Penetrating detection

Practical Medium Inversion

The internal structure layout and location information of the building, auxiliary,Help analyze scene characteristics and enhance environmental awareness

Compatible Design

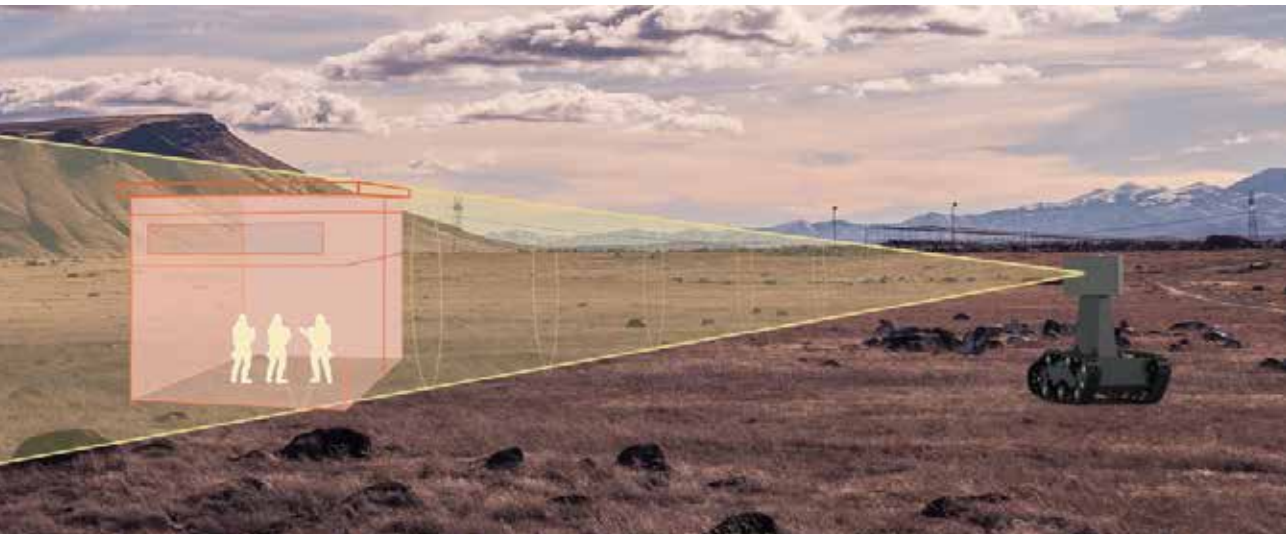
The system is equipped with a gimbal, which can be adapted to a variety of tactics vehicles, antenna array coverage area controllable, detection more flexible

Multi-target Detection Function

With multi-target detection capability

Military-grade Environmental Adaptability

Designed according to GJB150A-2009 standard,meet the needs of use under extreme conditions



UAV Mounted Through Wall Radar CEU200

PRODUCT OVERVIEW

UAV Mounted Through Wall Radar CEU200 is a human target detection equipment that integrates UWB radar, visual sensor, and UAV flight platform.This product can approach the exterior wall of tall building to detect and obtain information such as the location and quantity of human targets behind it in real time. Featured with characteristics of high mobility, strong penetration, and wide coverage, it is widely used in anti-terrorism, hostage rescue, Mission scenarios such as urban street fighting and fire search and rescue.



SPECIFICATIONS

Device Type	UAV Mounted Through Wall Radar CEU200
Penetrable Materials	Bricks, floor slabs, stone slabs, doors and concrete walls, etc., non-metallic, low moisture content objects
Detection Mode	Real-time two-dimensional positioning, simultaneous detection of moving and static multiple targets
Display Mode	Two-dimensional, target location, layout, quantity information
Detection Range	≥20m
FOV	Azimuth ≥90°, pitch ≥30°
Detection Accuracy	Azimuth direction ≤1m, distance direction ≤0.5m
Radar Dimension	≤22cm×20cm×6cm
Radar Weight	≤1.5kg
System Dimension	≤81cm×67cm×43cm(Unfolded, excluding paddles)
System Weight	≤9kg (including drone and radar)

PRODUCT FEATURES

High Penetration Performance

Able to detect live object behind wall/barrier of common construction material

High mobility

The system has fast maneuverability and can quickly approach different detection areas

Strong platform adaptability

it can adapt to multi-brand and multi-model UAV flight platforms

Various detection modes

support landing detection, hovering detection and other working modes, and flexibly adapt to different scenarios

Multi-target real-time positioning

multiple human targets can be located at the same time, and dynamic and static targets can be tracked and displayed in real time

High level of integration

UAV and radar system communication display & control integrated design

