

# NOVO

Digital Radiography

The Leaders in Portable DR Systems



EOD & IED



Special Forces



Counter  
Surveillance



Border Control



Customs

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# About NOVO DR

NOVO DR Ltd. is the leading developer and manufacturer of cutting edge, Portable, Digital Radiography (DR) X-Ray Inspection Systems for the Security & NDT industries.

Having the most experienced team in the Portable DR world, NOVO plays a key role in the industry selling field proven, X-Ray Inspection Systems to prominent organizations globally. We are constantly working on developing new products that take the DR Market to the next level.

Today, NOVO provides the best of its kind portable, digital radiography systems emphasizing the following strong points:

- Highest Image Quality
- Ruggedness & System Reliability
- Portability
- Fast & Courteous Customer Support
- Fieldwork Optimization



# What is Digital Radiography

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Throughout the years, radiography, using X-Ray film has been a common imaging method for inspecting suspicious articles and explosive devices.

The advance of technology brought well needed changes and the use of Digital Radiography (DR) expanded, while rapidly replacing conventional radiography methods.

Digital Radiography uses X-Ray digital detectors instead of traditional film or Phosphor Plates (also known as CR). These Digital systems yield immediate and superior quality X-Ray images at minimum time on target, minimum weight on target and with minimal radiation levels.

Each Digital Radiography system consists of the following:

- Digital Detector - Receives the X-Ray energy and converts it to a Digital Image
- System Controller - Controls the various system components and accessories
- Tablet & Software - Displays the image grabbed and allows for image analysis & enhancing
- X-Ray Source

***Digital Radiography is essentially the most efficient X-Ray Imaging Process!***



Tablet & Software



Digital Detector



X-Ray Source with System Controller

# Applications

## EOD & IED

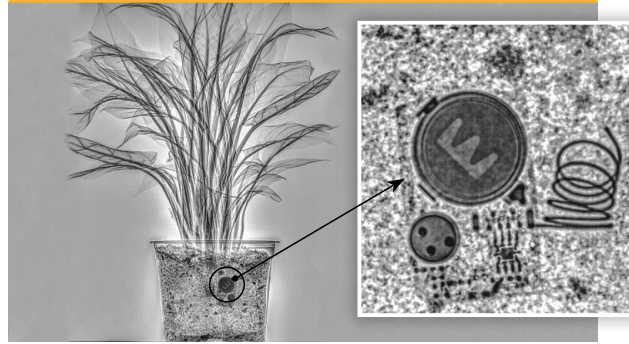


In EOD/IED split seconds decisions are imperative. Immediate high quality digital images are crucial for analysis of the insides of a suspected object or a bomb.

### *What is inspected?*

*EOD's, IED's, Explosives etc.*

## Counter Surveillance / VIP Protection

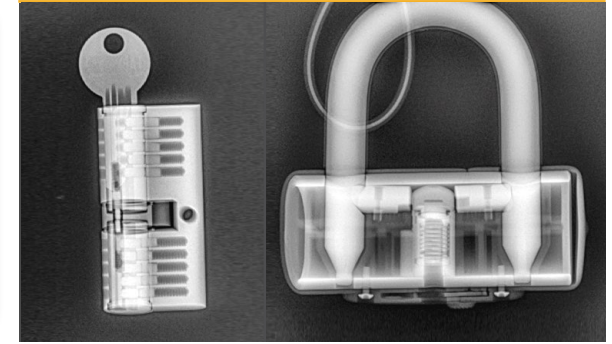


Counter Surveillance teams that guard public figures, or embassies, need to examine day to day items, innocent looking gifts or mobile phones in order to detect the slightest alteration in their electronic components. These items may be used as listening devices or might contain explosives.

### *What is inspected?*

*Electronic Devices, Furniture, Walls (concrete, drywall) Entire Hotel Rooms*

## Special Forces

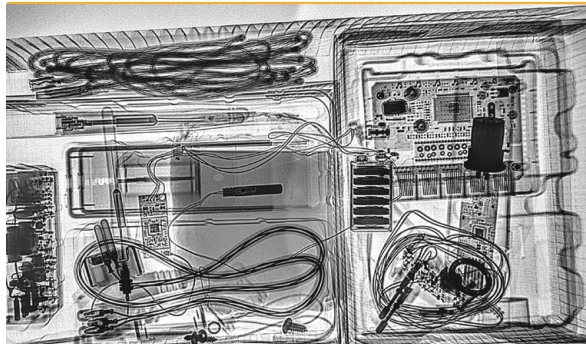


Special Forces require an easy to carry, simple to deploy, portable product. Keeping the systems as light as possible yet rugged and covert is crucial for mission safety and fast operation.

### *What is inspected?*

*IED's, EODs, Locks, Cylinder & many more...*

## Customs

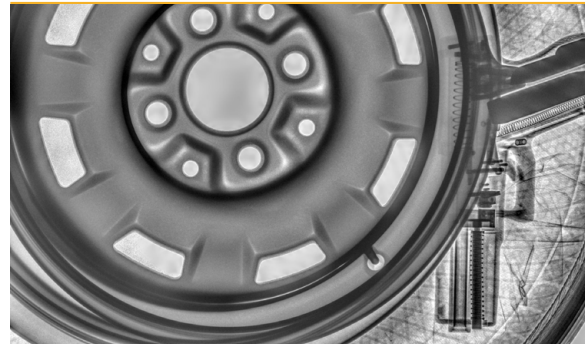


In customs, check point officials must perform a quick, non-intrusive and non-destructive inspection of suspected vehicles and packages with whom they come across on a daily basis.

### *What is inspected?*

*Contraband, Ammunition, Weapons, Drugs, Jewelry, Alcohol etc.*

## Border Control



Portable X-ray systems are the perfect solution for inspecting suspected items across borders and checkpoints. These systems are lightweight and rugged and can be easily transferred and quickly deployed.

### *What is inspected?*

*Contraband, Weapons, Drugs, IED & Explosives Detection etc.*

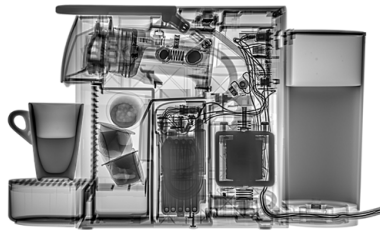
# Highlights



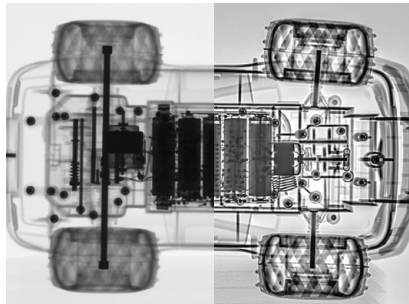
## Highest Image Quality:

Proprietary Software Enhancement Features

State of the art Digital Radiography detectors that produce exceptional high quality images with incredible detail and high penetration capabilities, ideal for both conventional and CBRN threat analysis.

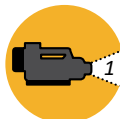


## Genie

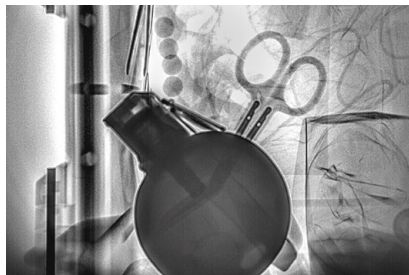


Before

After



## One Pulse Image

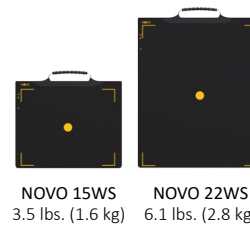


## Cutting Edge Detectors:

Thinnest, Lightest, most Durable

- Unmatched Image Quality
- Lightest in the Market
- Titanium Magnetic Connector
- Steel Penetration\* Over 3.3" (>85mm)
- 16-bit Latest Generation
- Detector Thickness 0.6" (15.6mm)
- Drop Tested 39.4" (100cm)
- Load Proof 661 lbs. (300kg)
- 6-8mm dead space from the bottom

\* Tested with Golden XRS-3 at ~10" (25cm)



## Wide Range of Systems:

Variety of Weights, Sizes & Capabilities

- Entire system fits in a single case
- Complete working system starting from ~12lbs. (~5.5kg)
- Hard Case Systems
- Backpack Systems



## Most Rugged System:

Suitable for all Terrain and Weather Conditions

- Usage in Extreme Weather Conditions
- MIL-DTL 38999 Connectors
- Titanium Magnetic Connectors
- Proprietary Designed Cables
- MIL-STD-810G Tablets
- Drop Tested Detectors
- Rugged Cases



## Touch Software:

Simple User Friendly Touch Interface

- Operating & Controlling the System
- Powerful Automatic Enhancing Algorithms
- Optimal Viewing Experience
- Variety of Tablets; rugged 7" up to a 20" 4K display.
- Laptop configuration available
- Windows® 10



## Unmatched Communication Range:

Wired & Wireless Communication

- Up to 300m Wired Communication
- 400m (0.25miles) LOS Standard Wireless Ronger
- Up to 3.3km (2 miles) LOS Wireless Communication
- Variety of Wireless Accessories
- Multiple Reels and Cable Options



## Parallel Multi Location Control & Display:

True Multi Tablet Control and Display allows for multiple display units to be connected to the system. Multiple team members can control the X-Ray and view the images at different locations.

These tablets can be used to:

- Control the System
- Display X-Ray Images
- Image Enhancing, Storage & Sharing.



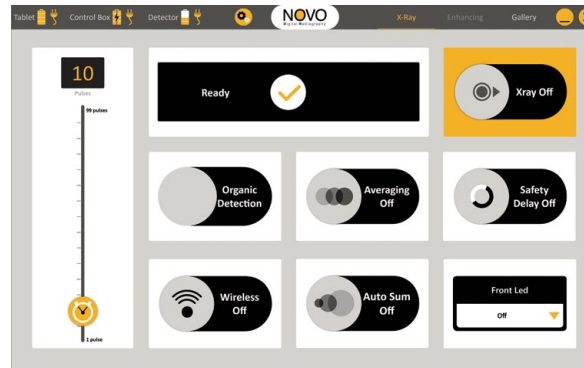




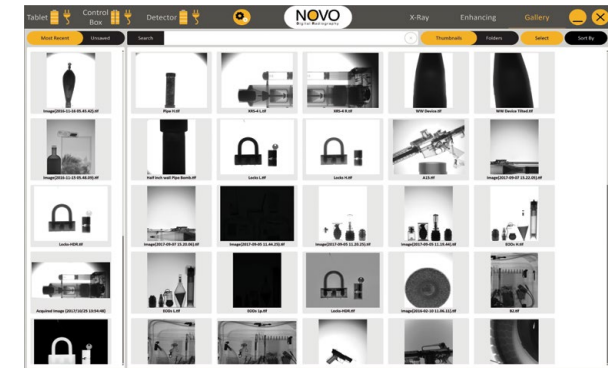
# NOVO Touch Software

The NOVO Touch Software is a proprietary software developed to provide the best user experience and functionality in harsh & extreme field conditions.

- User friendly, native touch interface
- Built in tools such as the Genie, HDR, subtraction and manual & automatic stitching
- Intuitive operation for grabbing X-Ray images, annotating, archiving and sharing information
- Controls hardware features
- Compatible with the latest touch screen technology & standard PC's
- Supports Windows® 10



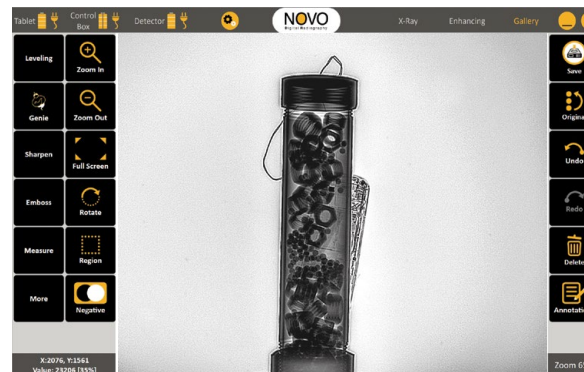
X-Ray Screen



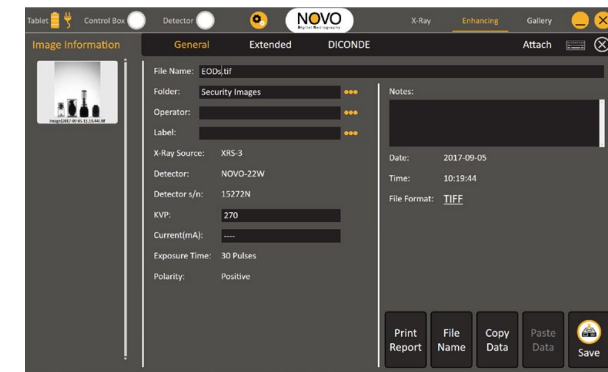
Gallery Screen

## Key Software Features

- GENIE
- HDR
- Manual & Automatic Stitching
- Averaging
- Automatic & Manual Summing
- 1600% Zoom
- Window Leveling
- Measurements
- Annotations-Text, Shape Etc.
- Audio Documentation
- Pseudocolor
- Subtraction
- Sharpness
- Emboss
- and many more....

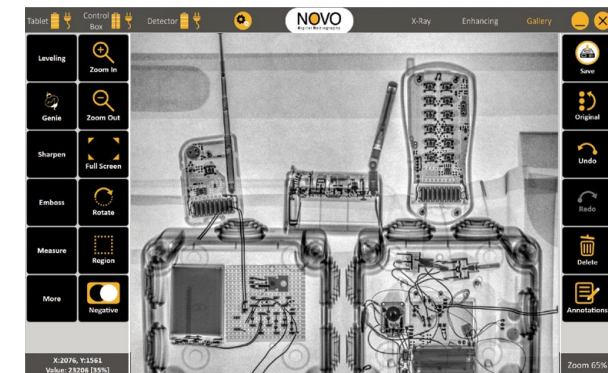
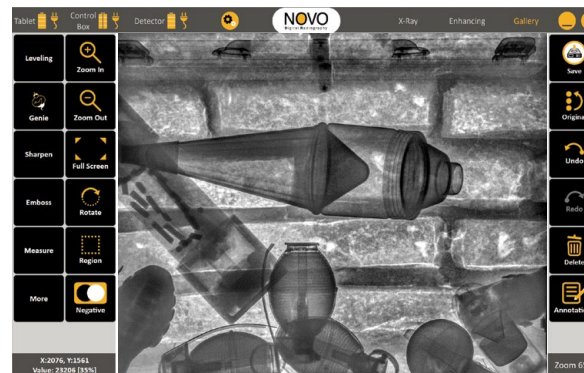


Enhancing Screen



Save/Data Screen

## Compatible with the XTK® Software



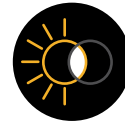
# NOVO Touch Software

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## The Genie Enhancement Feature – Proprietary State-of-the-art Algorithm

Allows for taking a single image and enhancing both easy to penetrate and difficult to penetrate objects on the same image, while showing all elements and highlighting all the threats with just one touch



## HDR Feature

Allows taking multiple images at different exposures, combined for the best results providing High Dynamic Range Imaging



Steel Pipe Bomb inside a Backpack



Electronic Device inside a Plant



## Stitching Feature

Stitch Multiple Images using our Easy To Use, Manual Stitching Feature or our Extremely Fast, Automatic Stitching Feature



Before: Multiple X-Ray Images



After: One Large X-Ray Image

# Systems

NOVO offers a wide variety of Systems suitable for various Security applications.

The following are NOVO's most popular Systems:

*For special requests & custom configurations please contact us at: [info@novo-dr.com](mailto:info@novo-dr.com)*

## NOVO 22 Rover 4K System

1. NOVO 22WS Detector
2. Panasonic Toughpad 4K Tablet (20") & NOVO Touch Standard Software
3. Power & Communication Hub
4. NOVO Control Box
5. Wireless Ranger USB
6. Detector Stand for 22W
7. Pelican iM2750 4K Configuration - Hard Case\*
8. Comm. Cable On Rugged Reel: 50m

*\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources*



## NOVO 15 Rover System

1. NOVO 15WS Detector
2. Panasonic Toughpad FZ-G1 Rugged 10" Tablet & NOVO Touch Standard Software
3. Power & Communication Hub
4. NOVO Control Box
5. Wireless Ranger USB
6. Detector Stand for 15W
7. Pelican iM2750 Custom Hard Case\*
8. Comm. Cable On Rugged Reel: 50m\*

*\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources*





## NOVO 15 Urban Spark System

1. NOVO 15WS Flat Panel Detector
2. Panasonic Toughpad FZ-G1 Rugged 10" Tablet & NOVO Touch Standard Software
3. Wireless Spark III
4. Wireless Ranger USB
5. Urban Backpack (Custom 5.11 Covrt™ 18)\*
6. Detector Stand for 15W
7. Comm. Split Cable: 10m & USB to Comm Adapter

\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources

\*\* Working system weight starting from 5.6kg!



## NOVO 15 Tactical Falcon System

1. NOVO 15WS Detector
2. Panasonic Toughpad FZ-G1 Rugged 10" Tablet & NOVO Touch Standard Software
3. Comm. Cable On Slim MiniReel 40m
4. Wireless Ranger USB
5. NOVO Falcon
6. USB to Comm Adapter
7. Detector Stand for 15W
8. Tactical II Backpack (Custom 5.11 All Hazards)\*

\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources



## NOVO 22 Ultimate Falcon System

1. NOVO 22WS Detector
2. Panasonic Toughpad FZ-G1 Rugged 10" Tablet & NOVO Touch Standard Software
3. NOVO Falcon
4. USB to Comm Adapter
5. Detector Stand for 22W
6. Wireless Ranger USB
7. Ultimate Backpack\*
8. Comm. Cable On Rugged Reel: 50m

\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources



# Systems

System Name	Detector	System Controller	Tablet	Cases
NOVO 15 Rover System	NOVO 15WS Detector	Control Box	Toughpad FZ-G1 Rugged 10" Tablet	Rugged iM2750 Pelican™ Custom Case
NOVO 15 Rover 4K System	NOVO 15WS Detector	Control Box	Toughpad 4K Tablet (20")	Rugged iM2750 Pelican™ Custom Case
NOVO 22 Rover System	NOVO 22WS Detector	Control Box	Toughpad FZ-G1 Rugged 10" Tablet	Rugged iM2750 Pelican™ Custom Case
NOVO 22 Rover 4K System	NOVO 22WS Detector	Control Box	Toughpad 4K Tablet (20")	Rugged iM2750 Pelican™ Custom Case
NOVO 15 Urban Spark System	NOVO 15WS Detector	Wireless Spark III	Toughpad FZ-G1 Rugged 10" Tablet	Custom 5.11 Covrt™ 18 Backpack
NOVO 15 Tactical Control Box System	NOVO 15WS Detector	Control Box	Toughpad FZ-G1 Rugged 10" Tablet	Custom 5.11 All Hazards Prime Backpack
NOVO 15 Tactical Falcon System	NOVO 15WS Detector	Falcon	Toughpad FZ-G1 Rugged 10" Tablet	Custom 5.11 All Hazards Prime Backpack
NOVO 15 Tactical Spark System	NOVO 15WS Detector	Wireless Spark III	Toughpad FZ-G1 Rugged 10" Tablet	Custom 5.11 All Hazards Prime Backpack
NOVO 22 Ultimate Control Box System	NOVO 22WS Detector	Control Box	Toughpad FZ-G1 Rugged 10" Tablet	NOVO's Customized Ultimate Backpack
NOVO 22 Ultimate Falcon System	NOVO 22WS Detector	Falcon	Toughpad FZ-G1 Rugged 10" Tablet	NOVO's Customized Ultimate Backpack
NOVO 22 Ultimate Spark System	NOVO 22WS Detector	Wireless Spark III	Toughpad FZ-G1 Rugged 10" Tablet	NOVO's Customized Ultimate Backpack

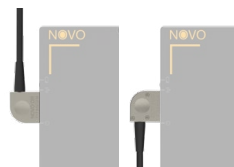
**For special requests & custom configurations please contact us at: [info@novo-dr.com](mailto:info@novo-dr.com)**

# Components

## Detectors

The NOVO 15WS and NOVO 22WS Detectors provide outstanding image quality in a rugged, durable, thin design and are the latest in DR imaging technology.

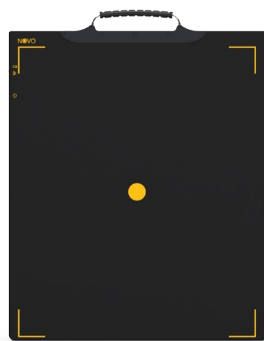
- Lightest in the Market
- Dual direction Titanium magnetic connector
- Quick removable & rechargeable battery
- Wireless & wired operation
- Specifically designed for fieldwork & harsh weather conditions



Dual Direction Titanium  
Magnetic Connector



NOVO 15WS  
3.5 lbs. (1.6kg)



NOVO 22WS  
6.1 lbs. (2.8kg)

Detector Model	NOVO 15WS	NOVO 22WS
Detector Imaging Area	9.1" x 11.2" (23.1cm x 28.4cm)	14.0" x 16.8" (35.6cm x 42.7cm)
Detector Size	10.6" x 13" (26.9cm x 33cm)	15.2" x 18.2" (38.5cm x 46.2cm)
Active Area (Imaging Area / Detector Size)	74% Active Area	85% Active Area
Detector Weight	3.5 lbs. (1.6kg)	6.1 lbs. (2.8kg)
Steel Penetration *	Over 3.3" (>85mm)	Over 3.3" (>85mm)
Detector Load Proof	661 lbs. (300kg)	661 lbs. (300kg)
Detector Drop Test	39.4" (100cm)	39.4" (100cm)
Detector Thickness	0.6" (15.6mm)	0.6" (15.6mm)
Dead Space	0.3" (8mm)	0.3" (8mm)
Bit Depth	16 bit latest generation	16 bit latest generation

\* Tested with Golden XRS-3 at ~10" (25cm)

## Cases

NOVO Offers a wide array of customized cases for a range of applications.

- Customized internal & external design
- Rugged
- Smallest Foot Print
- Lightweight



Rover Case

Patrol Backpack

Ultimate  
Backpack

Tactical  
Backpack

Tactical II  
Backpack

Urban  
Backpack

NOVO's Customized Cases	Description	Case External Dimensions
Rover Case	Rugged iM2750 Pelican™ Custom Case	24.6" x 19.7" x 14.4" (62.5cm x 50cm x 36.6cm)
Patrol Case	NOVO's Fully Sized Backpack	28.0" x 19.0" x 13.0" (71.1cm x 48.3cm x 33cm)
Ultimate Case	NOVO's Customized Ultimate Backpack	23.0" x 17.3" x 9.45" (58cm x 44cm x 24cm)
Tactical Case	S115 Pelican™ Backpack	18.0" x 13.0" x 10.0" (45.7cm x 33cm x 25.4cm)
Tactical II Case	Custom 5.11 All Hazards Prime Backpack	11.5" x 7.5" x 20.5" (29.2cm x 19.1cm x 52.1cm)*
Urban Case	Custom 5.11 Covrt™ 18 Backpack	19.0" x 12.25" x 6.5" (48.3cm x 31.1cm x 16.5cm)*

\* Main compartment dimensions

# Components- Controller

## Control Box

The Control Box is NOVO’s fully featured Controller. It can provide 16 hours of battery operation as well as continuous operation when AC Power is available. In addition, the Control Box supports NOVO’s Multi Tablet Control and Display feature which allows multiple team members to control the X-Ray and view the images simultaneously.



Control Box

## Falcon

The NOVO Falcon supports both Wired and Wireless Commutation while keeping the controller’s weight at a minimum. The Falcon is also an Excellent Robot integration module.



Falcon

## Wireless Spark III

The Wireless Spark III is NOVO’s Extremely Lightweight Controller. Making it the Ideal controller when minimum weight on target is required.



Wireless Spark III

	Weight	Unlimited operation with AC	Built-in Battery	Wired/Hybrid	Wireless	Supports All Golden Sources	Quick connection to source	Elevates X-Ray Source	MIL-DTL 38999 connectors	Weatherproof design	LED Indications	White LED flashlight	Infra-red flashlight	Siren Indication when X-Ray fires	Supports Parallel Multi Location Control & Display	Supports the NOVO Lookout and Folding Slider (See p.14)
Control Box	5.3 lbs. (2.4 kg)	✓	16 hours	✓	400m Line of Sight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Falcon	1.7 lbs. (0.8 kg)	✗	6 hours	✓	400m Line of Sight	✓	✓	✗	✓	✓	✓	✗	✗	✗	✗	✓
Wireless Spark III	0.7 lbs. (0.3 kg)	✗	6 hours	✗	400m Line of Sight	✓	✓	✗	✓	✓	✓	✗	✗	✗	✗	✗



# Components

## Tablets

NOVO offers a variety of tablets that can be operated from our customized case or used handheld.

- Pre-installed with the NOVO Touch Software
- Used to control the system's operation
- One or multiple parallel location control & display
- Ruggedized Tablets
- Rugged 7" up to a 20" 4K display
- A variety of Laptops Available
- Supports Windows® 10

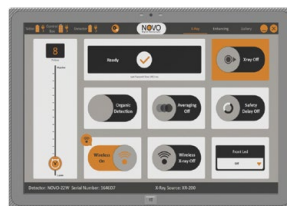
### Most Popular Tablets



Panasonic Toughpad™  
FZ-G1- 10"



Panasonic Toughbook®  
CF-33- 12"



Panasonic Toughpad™ 20" 4K

	Panasonic Toughpad™ FZ-G1	Panasonic Toughbook® CF-33	Panasonic Toughpad™ 4K
Screen Size	10.1"	12"	20"
Screen Resolution	1920x1200	2160x1440	3840x2560 (4K)
Screen Brightness (NIT)	800	1200	300
Multi-Touch	10 point, glove touch	10 point, glove touch	10 point touch
Operating System	Supports Windows 10	Supports Windows 10	Supports Windows 10
Weight	2.5 lbs. (1.1 kg)	3.4 lbs. (1.5 kg)	5.27 lbs. (2.4 kg)
Military Standard	MIL-STD-810G	MIL-STD-810G	N/A
Dust & Water Resistance	IP65	IP65	N/A
Drop Rating	4 ft (1.2m)	4 ft (1.2m)	1 ft (30cm)

## X-Ray Sources

NOVO's systems are designed to operate with the entire range of Golden Engineering X-Ray sources (both old and new generations).

- Specially designed connector/picatinny connects the Golden Source to NOVO's system controller
- Operational safety distance is easily obtained with wired or wireless capabilities
- The Golden X-Ray sources are portable, battery operated, lightweight & contain no radioactive materials



	XR150	XR200	XRS-3	XRS-4
KVP	150	150	270	370
Weight	4.9 lbs. (2.2 kg)	10.7 lbs. (4.8 kg)	11.8 lbs. (5.3 kg)	18.3 lbs. (8.3 kg)
Size	9.1" x 3" x 4.1" (23.1cm x 7.7cm x 10.3cm)	10.7" x 4.3" x 5.8" (27.2cm x 10.8cm x 14.8cm)	14.2" x 4.3" x 5.8" (36.1cm x 10.9cm x 14.8cm)	19.3" x 4.8" x 7.1" (48.9cm x 12.2cm x 17.9cm)
Pulse Rate	4 counts per second	10 pulses per second	15 pulses per second	9 pulses per second

# Accessories

## Lookout

The NOVO Lookout is a Lightweight, 3 in 1 accessory enabling the following capabilities.

### Organic Detection

- Assists in identification of the content and nature of an inspected item by providing organic / in-organic detection
- A color X-Ray image is automatically displayed
- The Organic Detection Dual Energy Images comply with airport security standards

### Live Video

- Provides a Live Video stream of the inspected item
- The Camera switches automatically between day / night mode (Infra-red)
- Provides a Still Image that can be grabbed and used for analysis and documentation

### Live Audio

- Provides a Live Audio stream of the inspected environment allowing the operator to hear the Golden's "clicks" in addition to monitoring the sounds in the surrounding area
- Controlled completely by the NOVO Touch Software
- Compatible with Golden Engineering XR150, XR200 and XRS-3 sources



## Folding Slider

The NOVO Folding Slider is the ideal solution for screening large objects.

- Screening area of 2X2 using the NOVO 22WS Detector
- Screening area of 3X2 using the NOVO 15WS Detector
- Controlled by the NOVO Touch Software
- Completely automated movement
- Automatically generates an outstanding high-quality mosaic image
- Small footprint for max portability & easy storage



	NOVO 15WS Detector	NOVO 22WS Detector
Grabbing Size	3x2	2x2
Folding Slider ~Size (folded)	37.4" x 13.8" x 7.9" (95cmx35cmx20cm)	
NOVO Folding Slider Rugged 1740 Pelican™ Case	44.2" x 16.1" x 14.0" (112.2cm x 40.9cm x 35.6cm)*	

\*External Dimensions

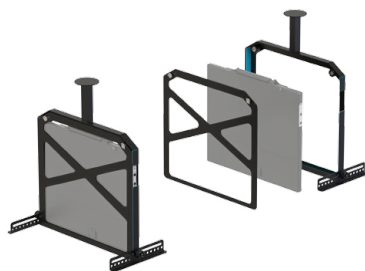
## Robot Accessories

NOVO offers various Robot detector holders for both the NOVO15WS and the NOVO 22WS detectors.

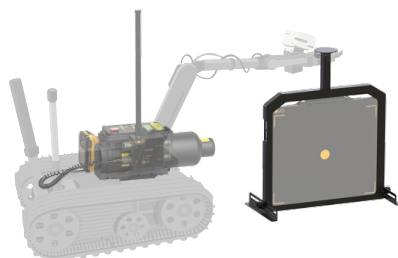
- Lightweight, shock absorbent, customized robot Detector Frame
- C shape holder to carry both the Detector and the X-Ray source



C Shape Detector and X-Ray Holder



NOVO Detector Frame



## Eagle - Long Range Wireless

The NOVO Eagle is an Extremely Long Range Wireless transceiver, which extends the wireless communication between the tablet and the inspection area – Detector and X-Ray Source.

- 3.3km (2 miles) line of sight
- Fully wireless or hybrid communication
- Ideal for Urban scenarios with high RF interference
- Ultimate CBRNE accessory where long operation distances are required
- 1/4" standard threading for tripod connection
- 5 Hours of internal battery operation
- Allows for robot integration



Connection to X Ray  
Via Picatinny



Tablet Side  
(Up-range)



Detector Side  
(Downrange)

Tablet Side  
(Up-range)



\*Tripods not included

Detector Side  
(Downrange)

Fully Wireless  
Configuration

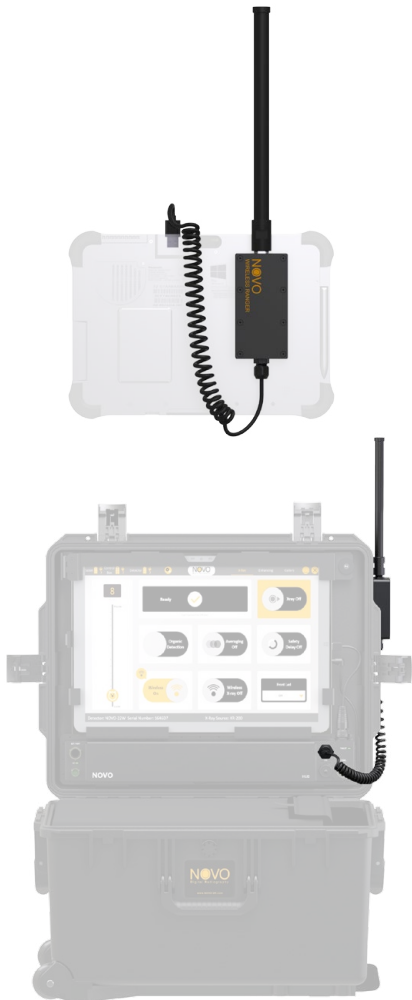


# Accessories

## Wireless Ranger

The NOVO Wireless Ranger is a wireless transceiver, which extends the wireless communication range between the tablet and the inspection area.

- Battery-free
- Lightweight
- Staggering 400m (0.25 miles) line of sight
- Built in magnets to mount on any ferromagnetic object - tablet, case, vehicle etc.



## Communication Cable

The communication cable provides reliable and fast data transmission between the various system parts.

- Power Over Line for unlimited operation when using an external power source (using the Control Box)
- Lightweight, robust custom reel- connected to the case or as “stand-alone”
- Extension cables of 50m, 100m and 150m
- Maximum of 300m wired operation range



Built-in 50m Rugged Reel



Mini Reel

Extension Reel



## Armor Kit

The Armor Kit Contains the NOVO Armor, which provides additional mechanical protection to NOVO's Detectors, the Armor Stand and a traveling soft cover.

- Newest shock absorbent technology case
- Water resistant design
- Supports wired & wireless communication
- Multiple positioning options
- Tripod connection using the Built-in 1/4" threads
- Simple Detector battery replacement



NOVO Armor 22



NOVO Armor 15



NOVO Armor Stand



## Soft Protective Cover

The Detector Soft Protective Cover provides additional protection for the NOVO 15WS & 22WS Detectors.

- Additional weather & impact protection
- Special opening for Tripod Mount access
- Various positioning options using a carrying strap or D-Rings
- Supports wired & wireless communication
- Lightweight & small footprint

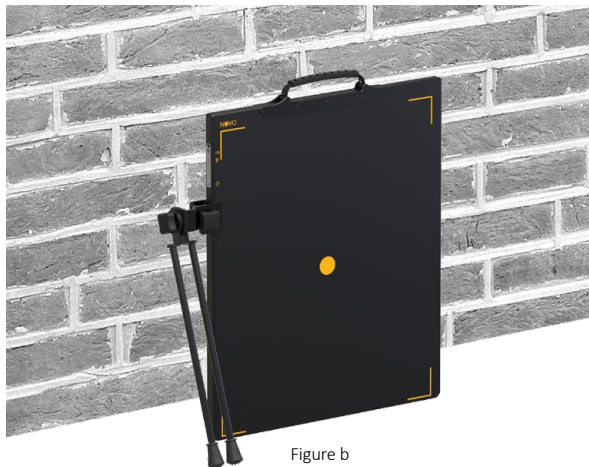


# Accessories

## Detector Stand

The Detector Stand is a custom-made accessory that firmly holds the Detector in an upright position (portrait or landscape).

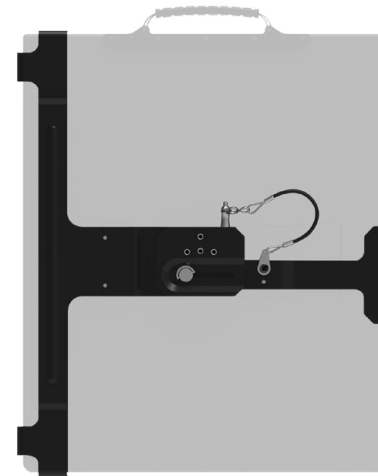
- Low profile design
- Utmost flexibility in tight places
- Multiple positioning options- standalone (figure a) or leaning on a wall (figure b)



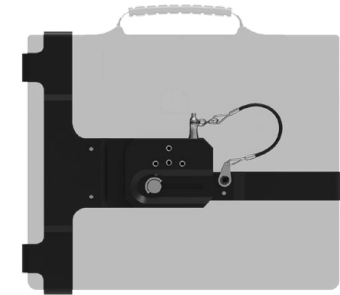
## Tripod Mounts

The Tripod Mount is a lightweight accessory that firmly holds the detector and provides various positioning options.

- Two 1/4" standard threads for tripod or manipulation arm connection
- Secured connection to the Detector using a safety pin
- Numerous positioning options



NOVO 22 Tripod Mount  
~1lbs. (~0.5kg)



NOVO 15 Tripod Mount  
~0.8lbs. (~0.35kg)





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