

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

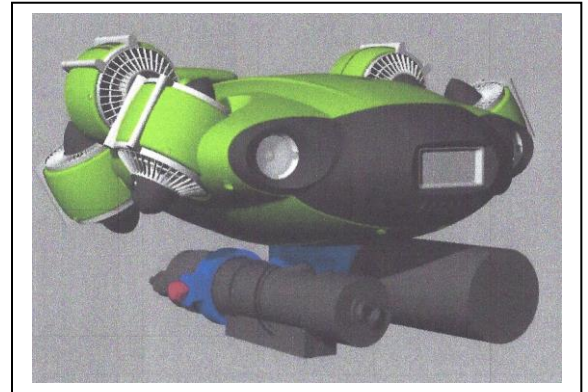
DiveRAD – ST (Search Tool) ~ Gamma & Neutron

## FEATURES:

- SELF-PROPELED SUBMARINE ROBOT
- BATTERY OPERATED

## SCIENTIFIC PACKAGE

- ONBOARD DATA STORAGE
- HIGH-DEFINITION CAMERA – VIDEO / STILL
- GAMMA & NEUTRON RADIATION DETECTORS
- UNDERWATER MOTOR CONTROL & VIDEO TETHER CABLE – 100 FEET (328 METERS)
- BASE STATION ELECTRONICS & SOFTWARE
- APP COMPATIBLE



## The DiveRAD™ Detector System

Includes:

### The QYSEA Fifish

Remote Submarine Robot

Self-Propelled  
Submersible Platform  
Video / Still Camera  
VR Headset

### DiveRAD- Underwater Explorer

DiveRAD-ST  
Controllers

Base Station Electronics & Software

Hard Shell Case for DiveRAD™  
System

Optional: Training

## SITUATION:

Cameras & thermal sensors are popular applications for **ROBOT** technology.

Data collection by ROBOTS is a great advance.

Unfortunately, detection for underwater radiation, chemical, biological contamination is still performed manually by divers, aquatic ecosystem biologists, and marine science engineers.

**NOW** take personnel out of harm's way in underwater radiation detection.

**US Nuclear Corp** offers  
underwater Sensor Detection with the  
**DiveRAD- Underwater Explorer**



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

DiveRAD – ST (Search Tool) ~ Gamma & Neutron

## EASY TO USE

- **DiveRAD** - Underwater Explorer
- RUGGED, SUBMERSIBLE
- WIDE RANGE COVERED
- ELECTRONICS BASE STATION:  
**LAPTOP WITH INSTALLED SOFTWARE**  
**DiveRAD™ SOFTWARE**
- UNDERWATER MOTOR CONTROL & VIDEO TETHER CABLE –  
100 FEET (328 METERS)

## SCIENTIFIC PACKAGE WATERPROOF CASE

### RADIATION DETECTION – DiveRAD-ST

- GAMMA & NEUTRON SEARCH TOOL
- GAMMA SENSITIVITY: 1  $\mu$ R/HR RESOLUTION
- **OPTIONAL:** NEUTRON DETECTION
- BATTERY OPERATED
- ONBOARD DATA STORAGE SERIAL PORT
- ENGINEERING UNITS - USER SPECIFIED
- UNIQUE DATA COLLECTION SOFTWARE INCLUDED
- **DETECTOR: IP68**
- **ELECTRONICS: IP 68**

## DESCRIPTION:

### DiveRAD-ST™:

- Radiation Detector
- Measures Gamma radiation & Neutron levels.
- Measures Dose Rate
- Quantify Gamma & Radiation Level – mR/h – Engineering Units: User Selectable: cps, mSv/h etc.
- GAMMA & Neutron source detection: Emitters in water, on boat bottoms, ocean mounted platforms, etc.

## DETECTORS:

- Gamma: Scintillation NaI(Tl)
- Neutron: Zinc Sulfide (ZnS)



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

## DiveRAD – ST (Search Tool) ~ Gamma & Neutron

ON BOARD – DiveRAD-ST	
Detector:	2" x 2" Scintillator NaI(Tl) 2" dia Zinc Sulfide (ZnS)
<b>Electronics:</b>	
	Pre Amp
	High Voltage
	Microprocessor
	Battery Pack
	Camera – Video & Still Photographs

DiveRAD™ BASE STATION ELECTRONICS
<b>INCLUDES:</b>
DiveRAD-E Electronics
DiveRAD-E Software
LAPTOP WITH INSTALLED SOFTWARE
<b>ELECTRONICS - DiveRAD-E</b>
Data Downloader
Data Archive & Retrieval – DiveRAD-ST
Video Cable
Power: Rechargeable Battery Pack

### DiveRAD-ST™ PERFORMANCE with NO SHIELDING ~ Using Co-60 & 2" NaI(Tl) Detector

- 1 Curie Co-60 source is 0.38 Rem/hr at 1 meter (3.8 E5 µRem/hr)
- 2 inch diameter (2 inches thick) NaI(Tl) Detector sensitivity to Co-60 is 900 cpm per µR/hr.
- Typical background at 10 uR/hr induces a count rate of about 9,000 cpm in an unshielded detector.

Co-60 Gamma Detection with DiveRAD-ST (Search Tool)			
	ACTIVITY	DISTANCE	TIME TO DETECT
	1 Ci	1 Meter	1 Sec
	1 Ci	3.5 Meters	1 Min
	1,000 Ci	5 Meters	30 Min

- These calculations are based upon a 2 inch by 2 inch NaI(Tl) detector.
- The 2 x 2 inch NaI(Tl) detector's sensitivity for Gamma emitters from 50 KeV to 1.3 MeV ± 15% for Curies detected.
- The 2 " diameter Zinc Sulfide Neutron probe detects a wide energy range of Neutrons. It has been optimized to favor slow Neutron sensitivity. Thermal neutrons are detected by means of the boron n-alpha reaction. Probe delivers approximately 60 cpm per neutron/cm<sup>2</sup>/second and requires a 900 volt supply. The probe is 8" long x 2" in diameter. It is completely insensitive to gammas in fields below 10R/hr



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of USNUCLEAR CORP

**UNDERWATER EXPLORER  
SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL  
DETECTION SYSTEM**

**DiveRAD – ST (Search Tool) ~ Gamma & Neutron**



**DIVERAD SERIES  
UNDERWATER EXPLORER**



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

DiveRAD – ST (Search Tool) ~ Gamma & Neutron

## DiveRAD™ Detector System

### Includes:

#### The DiveRAD™ Detector System

Includes:

#### The QYSEA Fifish

Remote Submarine Robot

Self-Propelled

Submersible Platform

Video / Still Camera

VR Headset

Motor Control & Video  
Tether Cable – 100 Feet

Hard Shell Case for FIFISH 6

#### DiveRAD-ST

Controllers

Base Station Electronics – DiveRAD-E

Unique Data Collection Software

Cables, Cords & Connectors

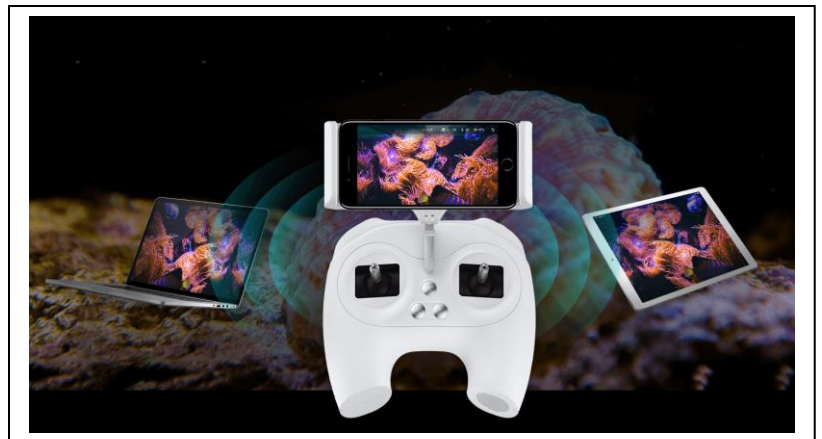
Filters: Glass Fiber, Charcoal & Others

Hard Shell Case for DiveRAD™ System

Optional: Training



HARD SHELL CASE FOR FIFISH  
6 & ACCESSORIES



BRILLIANT PICTURES – VIDEO & STILL  
LINK TO LAPTOP – BASE STATION  
CELL PHONE VIA APP  
DOWNLOAD TO PRINTER



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

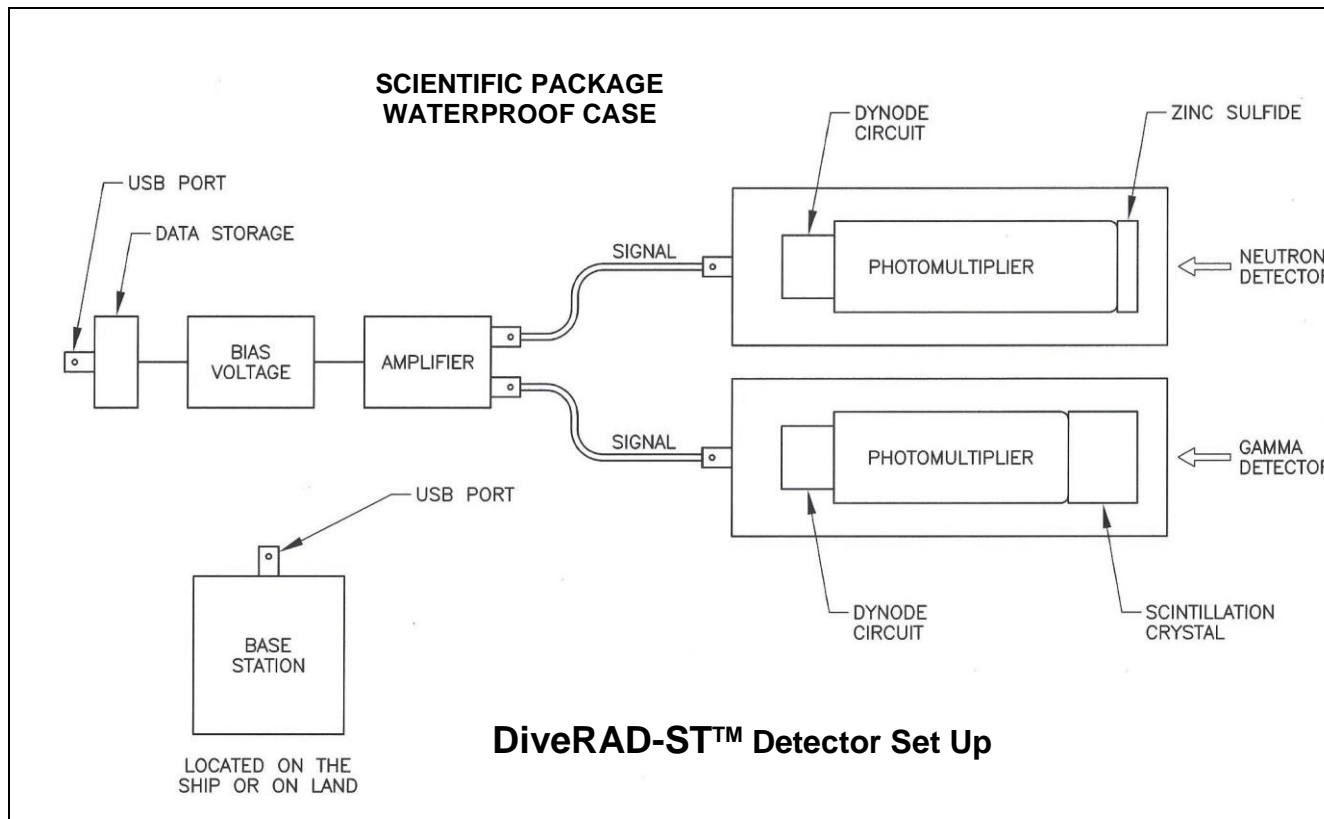
[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

**DiveRAD – ST (Search Tool) ~ Gamma & Neutron**



**Patrol Boat Base Station**



**DiveRAD with Controller and Mounted Cell Phone Video**



**TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

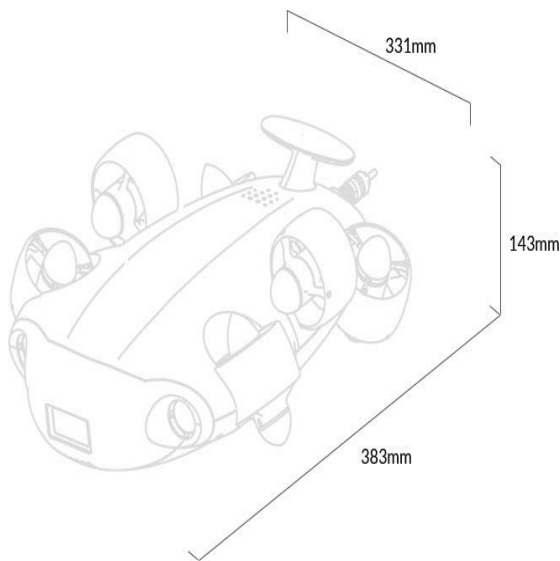
[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of USNUCLEAR CORP

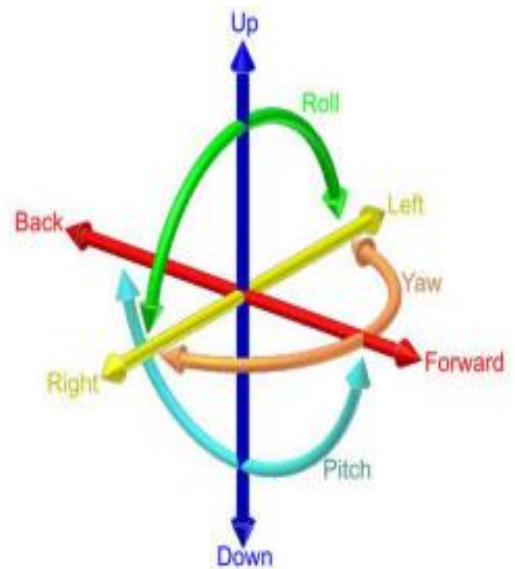
**UNDERWATER EXPLORER  
SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL  
DETECTION SYSTEM**

**DiveRAD – ST (Search Tool) ~ Gamma & Neutron**

# **QYSEA ROBOT SUBMARINE**



**DIMENSIONS**



**MANEUVERABILITY**



**TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP

# UNDERWATER EXPLORER SUBMARINE ~ RADIATION, CHEMICAL, BIOLOGICAL DETECTION SYSTEM

DiveRAD – ST (Search Tool) ~ Gamma & Neutron

## QYSEA ROBOTIC SUBMARINE SPECIFICATIONS

### DESIGN

- Omni Directional Robotic Submarine
  - Tether – Motor Control & Video
  - Tether: Standard 100 m (328 feet) on Spool
  - Breaking Force: 80 kgf
  - Posture Lock
  - Hovering  $\pm$  1 cm
  - Depth Rating: 100 meters (328 feet)
  - Thrusters: (6) - (4) Vector (2) Horizontal
  - Speed Maximum: 3 knots  
(still water) (1.5 m/s)
  - Temperature; -10°C ~ 60°C (14°F ~ 140°F)
  - Dimensions: 383mm x 331mm x 143mm  
(15 in x 13 in x 5 5/8 in)

### ROBOTIC SUBMARINE CONTROLLER

- WiFi Supported
  - Battery Life: 4 hours
  - Data Archive: Micro SD Card Slot
  - Input in FAT32 (no greater than 32GB)
  - Download in EXFAT (no greater than 64GB)

### POWER

- Max Dive Time: 4 hours
- Rated Capacity: 9000mAh / 97.2 Wh
- Voltage: 12.6 V
- Charging Time: 1.0 Hour with  
FIFISH Quick charge
- Battery Type: Li-ion Panasonic 18650
- Charger / AC Adapter

### CAMERA

- 1/2.3 SONY CMOS
  - Video Tether 100 meters (328 feet)
  - Auto / Manual
  - Ultra-Wide Angle Lens
  - Photo Resolution: 4000 x 3000
  - Photo Format; JPEG, DNG
  - Video Resolution: 1080P FHD, 720HD
  - Stabilization: EIS (Electronic Image  
Stabilization)
  - Internal Storage: 64 GB
  - Brightness: 4000 Lumen

### APP

- Compatible:
  - iOS 10.0.0 or Later
  - Android 5.0 or later
  - Samsung S7 or later
  - Huawei Mate 9 or later
  - MiMix 2 or later
- Live Streaming: 720P, 25/30fps  
480P, 25/30fps
- Number of Stream Users: Max 2 Receivers



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Office) 818-457-9554 (Cell)

[info@usnuclearcorp.com](mailto:info@usnuclearcorp.com)

[WWW.USNUCLEARCORP.COM](http://WWW.USNUCLEARCORP.COM)

Divisions of  USNUCLEAR CORP