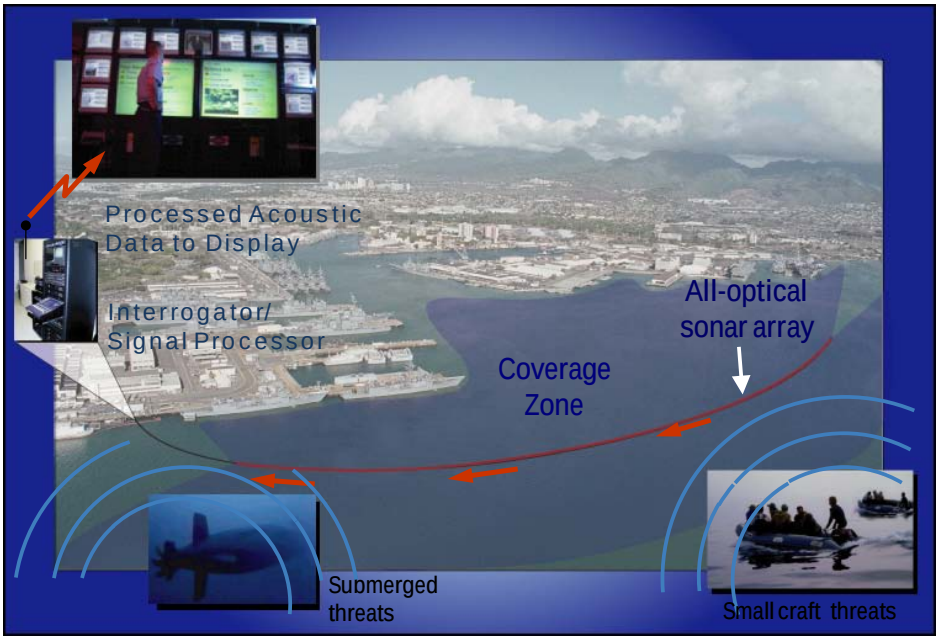
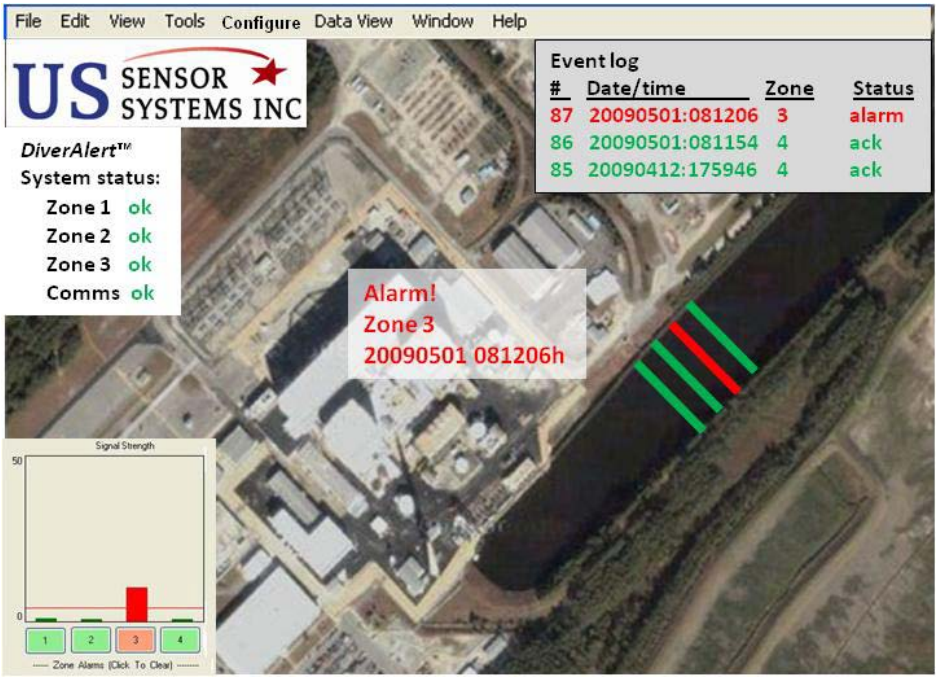
DiverAlert™ Passive Fiber Optic Intrusion Detection

DiverAlert™ is a completely passive underwater monitoring system that provides detection, localization, classification and tracking of underwater intruders. Every inch of the array is highly acoustically sensitive, leaving no gaps in the coverage. By placing the arrays at the bottom of a shallow waterway, it forces any intruding diver to pass within just a few feet of the array. With a design detection range of over 100 feet for even the quietest diver operating on a closed circuit rebreather, this ensures the absolute highest probability of detection. The array can be strategically positioned at key locations to maximize the probability of detection prior to reaching critical equipment. The DiverAlert™ system generates a high fidelity/low distortion reproduction of actual noise events, and employs narrow-band signal processing techniques to differentiate between real intruders and normal, everyday events. Because the system is completely passive, it will cause no harm to the aquatic life or the environment, and requires no environmental approvals.





Upon detection of a diver, the system sounds an audible alarm, the associated zone in the display turns from green to red, the signal strength bar for the appropriate zone will surpass the threshold and turn to red, and the location and the time of the detection will be logged. If desired, the user can listen to the actual underwater sound detected. The figure at right shows a typical DiverAlert™ system display. In addition to a map view showing the alarmed zone and a pop-up box providing information about the alarm, a signal strength bar chart is also provided, with the signal strength of each of the sensors displayed concurrently. An event log provides historical information about the most recent alarmed events. The system constantly monitors all of the zones as well as the communications link to alert the user of any system level problems.

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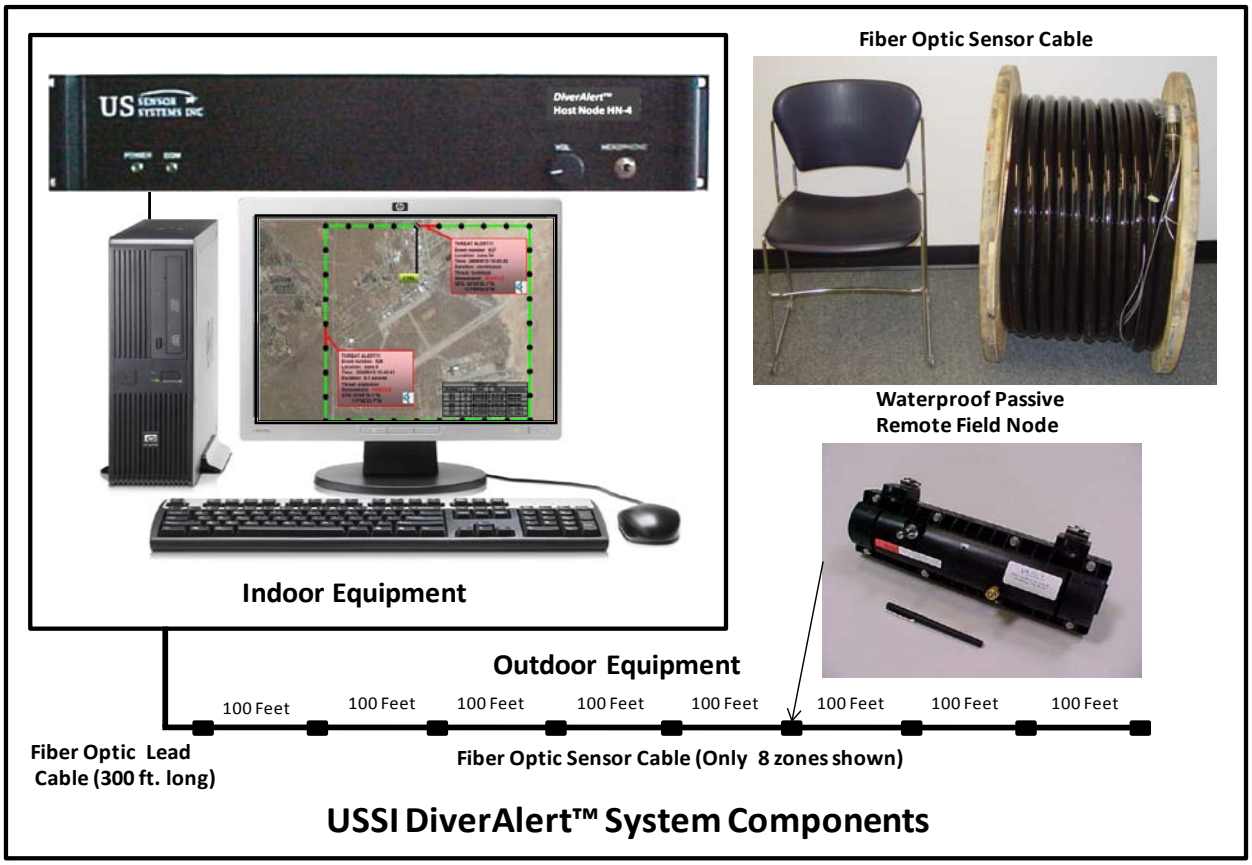
System Specifications



USSI DiverAlert™ System Components

Parameter	Units	Value	Comments
# Sensing Zones		Up to 12	Zones are independent
Zone length (ea)	Ft.	5-100	Selectable by customer
Lead cable length	Ft	300	
Sensing cable diameter (approx.)	in.	<2	
# simultaneous events (per zone)		1	
System self noise	dB:µPa/√Hz	55	
Dynamic range	dB	110	
Receiver distortion (thd)	dB	-40	
Crosstalk	dB	-40	
Display		Graphical	Zone status over a satellite image
Data archive (last data segment)	Minutes	10	Auto save upon positive alarm
Max. operating depth	Ft.	115	
Power mains	VAC	110/220	Universal supplies
Operating temperature (outdoor equipment)	°C	-10 - +50	
Storage temperature (outdoor equipment)	°C	-20 - +70	
Operating temperature (indoor equipment)	°C	0 - 50	
Storage temperature (indoor equipment)	°C	-20 - +70	