



Marine Sonic Technology, Ltd.

5508 George Washington Memorial Hwy. • White Marsh, VA 23183

Sea Scan[®] HDS – Technical Note

Available Transducer Frequency Selection Guide

Please note that all ranges and sizes are listed in Meters/Feet.

Frequency (kHz)	Avg. Max. Range	Typ. Range	Target Size
150*	400 / 1333	200 / 667	4 / 13
300	200 / 667	100 / 333	2 / 6.4
600	75 / 250	30 / 100	0.6 / 2
900	40 / 133	25 / 83	0.5 / 1.6
1200	25 / 83	10 / 33	0.2 / 0.6
1800	15 / 50	7.5 / 25	0.15 / 0.5

All maximum ranges are the average maximum range detectable by the sonar system at the listed frequency. These are typical maximum ranges that are attainable with the particular sonar frequency in Salt Water. Longer ranges may be attainable in Fresh Water. Some factors that affect the maximum range of the sonar are: bottom type, water salinity, water depth, water temperature, particulates, electrical noise, and electromagnetic noise.

The typical ranges listed are the typical operating ranges that each frequency is most frequently used at. The target size is the smallest target size that will be positively identifiable at that range and frequency of sonar. Smaller objects can be ensonified and identified, however targets smaller than those listed will be more difficult.

The target sizes were calculated using an average of 512 samples per channel and classifying an identifiable object as any object that is 10 samples or larger. This value was chosen because of the size of pixels on the average display (displayed samples and not the actual sampled resolution of 1024 samples max.) in which 1 sample represents approximately 1 pixel.

The equation used to calculate the target sizes is listed here:

$$\text{Size of Object in Meters} = ((\text{Range in Meters} / 512.0) * 10.0)$$

Consequently you can substitute the range in feet to get the size of the object in feet.

Other Resources:

<http://www.marinesonic.com/>

Please feel free to contact us for more information

* 150 kHz frequency ONLY available in Sea Scan HDS Embedded configurations. It is NOT available in a towed configuration.