

RULES OF THUMB

NOTE: All values entered in these tables are empiric and approximate. They may therefore not necessarily correspond to theoretically calculated figures.

Table indicating how to select antenna frequency

Antenna Frequency (MHz)	Suitable Target Size (m)	Approximate Depth Range* (m)	Approximate MAX. Penetration Depth** (m)
25	1.0	5 - 30	35 - 60
50	0.5	5 - 20	20 - 30
100	0.1 - 1.0	2 - 15	15 - 25
200 - 250	0.05 - 0.50	1 - 10	5 - 15
500	0.04	1 - 5	3 - 10
800	0.02	0.4 - 2	1 - 6
1000	1cm	0.05 - 2	0.5 - 4
1600	1cm	0.2 - 1	0.5 - 2

* *The depth of electromagnetic wave penetration is strongly dependent on local ground conditions. These depths are calculated in **normal** geological environment, absent of low resistive layers.*

** *Maximum penetration depths are based on excellent radar conditions, such as fresh water/ice, limestone, dry sand, moraine and concrete. Depths vary greatly with water saturation in the medium.*

Recommended settings for data collection with respect to sampling frequency and lateral sampling interval

Antenna Frequency (MHz)	Recommended Sampling Frequency (MHz)	Recommended Trace Interval (m)
25	150 - 600	0.30 - 0.75
50	400 - 800	0.20 - 0.50
100	800 - 1 800	0.10 - 0.30
200 - 250	1 600 - 3 500	0.03 - 0.10
500	4 000 - 7 000	0.02 - 0.05
800	6 500 - 14 000	0.02 - 0.04
1000	15 000 - 30 000	0.01 - 0.05
1600	20 000 - 40 000	0.05 - 0.05

The recommended intervals listed in the above tables should provide suitable settings for *nearly all* geological environments. However, in some rare cases, you may benefit from setting these outside these intervals. *Remember: Do NOT* set the sampling frequency to *less* than 6 times the antenna frequency. If targets are smaller point objects, use *shorter* trace interval settings. If targets are larger objects or planes, use the *longer* trace interval.