



System Requirements	<p>Operating System: 64bit Microsoft Windows (MS) 10 and 11</p> <p>CPU: 64 bit Intel, 64 bit AMD or equivalent 64 bit Intel Pentium compatible Multicore CPU with minimum of 2 GHz.</p> <p>Memory: Minimum of 16 Gb, recommended 32 Gb RAM, 1000 GB Free Hard Disk Space for Data processing</p> <p>Graphics Adapter: Minimum of FullHD resolution with 32 Bit Colour Depth and 1 Gb Graphics Memory, recommended double screen with 4Gb memory and GPU.</p> <p>Interfaces: 1 free USB-port; Direct or USB-Hub for software security key</p>	General	<p>Tool for estimating the thickness of the excavation damage zone in blasted rock tunnels or structures. The operation can also be used to study other features, which can cause anomalies in the frequency or amplitude response of a GPR signal.</p> <p>Requires :</p> <ul style="list-style-type: none"> Road Doctor Core Road Doctor GPR Module
Frequency Analysis	<p>Frequency and reflection amplitude response is calculated using Discrete or Fast Fourier Transform in given time windows. The windowing function can be defined and also the signal attenuation compensation factor for each of the time-window, if multiple time windows are used.</p> <p>Time windows: The calculations are done from a given time interval or in relation to the interpreted layers. The selected time window is split into sub-windows, which can overlap.</p> <p>Possible calculated parameters:</p> <ul style="list-style-type: none"> • The central frequency and width at given amplitude level calculated from the shape of the amplitude spectrum. • The highest amplitude in the amplitude spectrum • The average amplitude or frequency sum in the given frequency window. • The amplitude spectrum's shape parameters are calculated as relations of the average amplitude from the selected frequency window to other average amplitudes from other frequency windows, which the operator can define. • The previous value as dBs in relation to the given value <p>The average amplitude value is used for EDZ zone calculation. The program automatically calculates a threshold value based on given initial values and locates the EDZ-zone depth based on these values.</p>	Amplitude analysis	<p>Signal's amplitude parameters can be calculated in the same time slice windows as the frequency response.</p> <p>The amplitude is calculated as an average amplitude value or as dBs in relation to a given amplitude reference level.</p> <p>The normal GPR amplitude time-slice images can also be used in Rock Module, because GPR Module is the base for Rock Module.</p>
		Outputting the results	<p>Display: All the frequency and amplitude calculations created in Rock Module can be shown directly on the screen as surface images.</p> <p>Text Output: All the calculations are saved to text tables and directly linked to the project tree for evaluation later or to be shown in other programs.</p> <p>Point Cloud display: The results, which are directly linked to the project and displayed in the view, can be shown in the point cloud for 3D visualization.</p>