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<tr><td rowspan="2">System Requirements</td><td rowspan="2">Operating System: 64bit Microsoft Windows (MS) 10 or 11

CPU: 64 bit Intel, 64 bit AMD or equivalent 64 bit Intel Pentium compatible Multicore CPU with minimum of 2 GHz.

Memory: Minimum of 16 Gb, recommended 32 Gb RAM, 1000 GB Free Hard Disk Space for Data processing

Graphics Adapter: Minimum of FullHD resolution with 32 Bit Colour Depth and 1 Gb Graphics Memory, recommended double screen with 4Gb memory with GPU.

Interfaces: 1 free USB-port; Direct or USB-Hub for software security key</td><td>General</td><td>Tool for calculating the frequency and amplitude response of concrete structures to help evaluate possible damages in the structures.

The settings can be saved and loaded from previous analysis.

Requires :
Road Doctor Core
Road Doctor GPR Module</td></tr>
<tr><td>Amplitude analysis</td><td>Signal’s amplitude parameters can be calculated in the same time-slice windows as the frequency response.

The amplitude is calculated as an average amplitude value or as dBs in relation to given the amplitude reference level.

The normal GPR amplitude time-slice images can also be used in Concrete module, because the GPR Module is the base for Concrete module.</td></tr>
<tr><td>Frequency Analysis</td><td>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.

Time slice windows: The calculation can be done from the given fixed time interval or in relation to the interpreted layers, for instance the pavement bottom or steel enforcement level. The program can also split the selected time interval into smaller slices, which can overlap.

Calculated parameters:
• 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 values as dBs in relation to the given value</td><td>Outputting results</td><td>Display: All the frequency and amplitude calculations created in Concrete Module can be shown directly on the screen as surface images drawn from the created database.

Text Output: All the calculations are saved to text tables or directly linked to the project tree for later evaluation or to be shown in other programs.

Point Cloud display: The results which are directly linked to the project can be shown in the point cloud for 3D visualization.</td></tr>
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