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VIY® Ground Penetrating Radar 3 Series

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The VIY®3 series ground penetrating radar (GPR) are the devices for non-destruction examination that allow essentially to reduce the cost and time of the study of geological situation before construction or digging work. In many cases, including the search for cavities or plastic pipelines, no other methods or instruments that can give a positive effect.

Transient Technologies LLC Company is a leading developer and manufacturer of ground penetrating radars and associated equipment in Ukraine. With years of experience and highly skilled experts of the company, our products are of high consumer properties, reliability, simplicity and convenience of use.

VIY3-125(i)

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VIY3-125(i) GPR

Antenna frequency: 125 MHz
Analogue-to-Digital Converter range: 18 bit
Dynamic range: at least 135 dB
Measuring rate: up to 55 traces per second
Survey window: 120, 180, 240, 300 ns
Maximum number of samples per trace: 1000
Trace stacking number: up to 128
Depth of sounding: up to 15 m (determined by soil properties)
Spatial resolution: better than 1.0 m
Operating modes: point collection, continuous, measuring wheel
Maximum size of a profile: up 1.000.000 traces
Interface: USB2
Build-in inclinometer: in VIY3-125i
Dimensions (L x W x H): 1105 x 580 x 232 mm
Weight: 25 kg
Operating temperature range: -10°C to 40°C
Operating time: at least 8 hours

VIY3-300(i) GPR

Antenna frequency: 300 MHz
Analogue-to-Digital Converter range: 18 bit
Dynamic range: at least 135 dB
Measuring rate: up to 55 traces per second
Survey window: 66, 100, 133, 166 ns
Maximum number of samples per trace: 1000
Trace stacking number: up to 128
Depth of sounding: up to 8 m (determined by soil properties)
Spatial resolution: better than 0.3 m
Operating modes: point collection, continuous, measuring wheel
Maximum size of a profile: up 1.000.000 traces
Interface: USB2
Build-in inclinometer: in VIY3-300i
Dimensions (L x W x H): 610 x 312 x 170 mm
Weight: 8.4 kg
Operating temperature range: -10°C to 40°C
Operating time: at least 8 hours

VIY3-700(i)

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VIY3-700(i) GPR

Antenna frequency: 700 MHz
Analogue-to-Digital Converter range: 18 bit
Dynamic range: at least 135 dB
Measuring rate: up to 55 traces per second
Survey window: 16, 24, 32, 40 ns
Maximum number of samples per trace: 1000
Trace stacking number: up to 128
Depth of sounding: up to 2.5 m (determined by soil properties)
Spatial resolution: better than 0.12 m
Operating modes: point collection, continuous, measuring wheel
Maximum size of a profile: up 1.000.000 traces
Interface: USB2
Build-in inclinometer: in VIY3-700i
Dimensions (L x W x H): 311 x 176 x 152 mm
Weight: 3.0 kg
Operating temperature range: -10°C to 40°C
Operating time: at least 8 hours

VO-20 Measuring Wheel

VO-20 measuring wheel (odometer) is designed to determine the distance covered by GPR during the process of data acquisition. Odometer fastened to the GPR body and connects to special connector. Measuring wheel compatible with the VIY3 series GPR.

The VO-20 measuring wheel characteristics
Step: 31 mm
Cable length: 0.3 m
Weight: 0.7 kg
Operating temperature range: -10°C to 40°C

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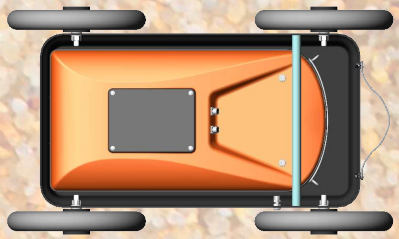
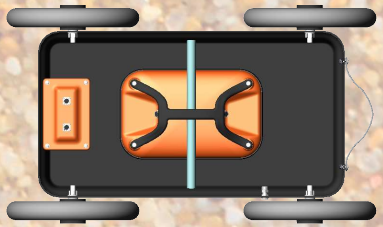
CART-36

CART-36 handcart allows a single operator to quickly carry out survey large areas.

Appropriate for use with VIY3-300 and VIY3-700
Durable and reliable design
Universal mounting for notebook
Built-in odometer
Large diameter wheels
Compact for transport
Dimensions (L x W x H):
Operation mode: 1000 x 500 x 970 mm
Transport mode: 845 x 500 x 320 mm
Weight: 12.8 kg



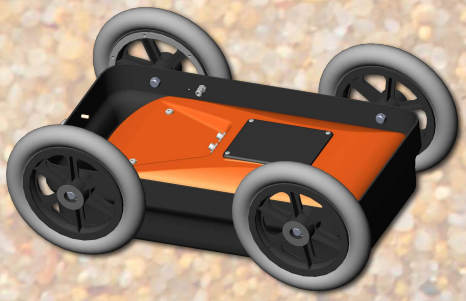


CART-6

CART-6 is intended to tow the GPR behind the vehicle. It protects the GPR against mechanical damage during long-term operation.

Appropriate for use with VIY3-300 and VIY3-700
Durable and reliable design
Built-in odometer
Large diameter wheels
Removable tow bar
Rigid fastening for tow hitch
Dimensions (L x W x H):
- **Operation mode: 1 580 x 500 x 320 mm**
- **Transport mode: 845 x 500 x 320 mm**

Weight: 8.5 kg



SYNCHRO 3

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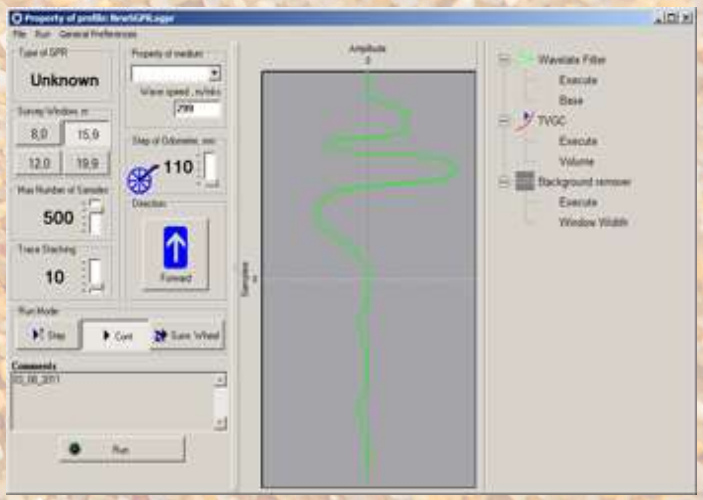
Software

Synchro3 software allows all settings the VIY3 series GPR, to manage the process of measurement, load into a computer store, process and print the measured data. The same can import data from the VIY2 series GPR.

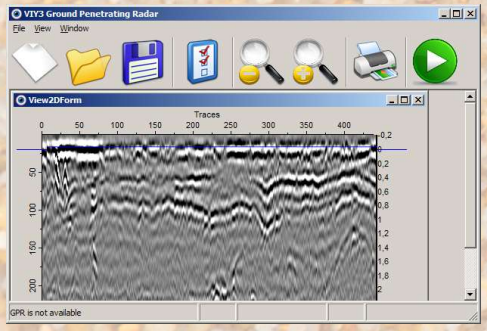
The Synchro3 software offers set of filters (tools) including low-pass filter (LPF) and high-pass filter (HPF), Wavelet filter, Hilbert transform, time-varying gane control (TVGC), background removal, compression and other ones.

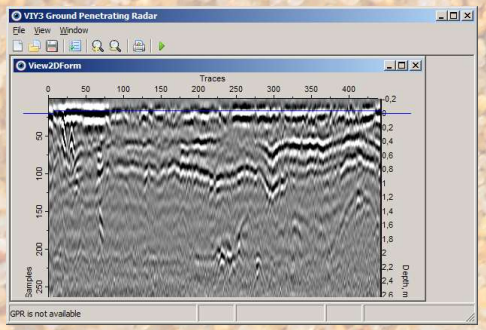


Getting data can be executed step by step or continuous modes, as well as with running from the measuring wheel. For operator convenience automatic files numbering is supported in packet data acquisition.

Software

Adjustable interface, support for multiple languages.





Measured data (GPR profile) are presented as 2D images, where the amplitude is displayed brightness or color gradation. The maximum individual file size is determined by the operating system and can reach up to 2 GB.

Results of measurement can be displayed as separate traces (A-scan), profiles (B-scan) or as horizontal cuts (C-scan).

Software

Double precision math is used in post-processing. Measured data of GPR profile remain unchanged. Post-processing is implemented as a script consisting of a set of specialized program add-ins (tools). The script is saved as a separate file whose name matches the name of the data file. When you open a data file, GPR profile is calculated with the script. It is allowed to change the order of the tools in a script and independent settings for each tool.

The obtained GPR data can be exported in BMP, JPEG, TXT, SEG-Y formats, and printed out.

Synchro3 software runs under Windows ® 2000, Windows ® XP, Windows ® Vista, Windows ® 7. To run the software you need a computer with iPentium 133 processor and above.

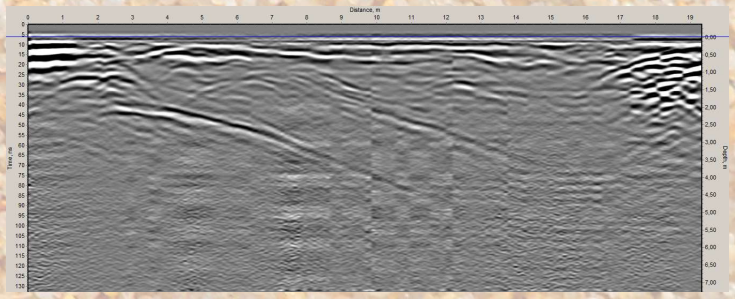
Topographic Correction

Realistic sites for GPR sounding are rarely flat and horizontal. Display of the GPR profile as rectangle distorts the actual situation when the surface had height variations and antenna unit is not moved horizontally.

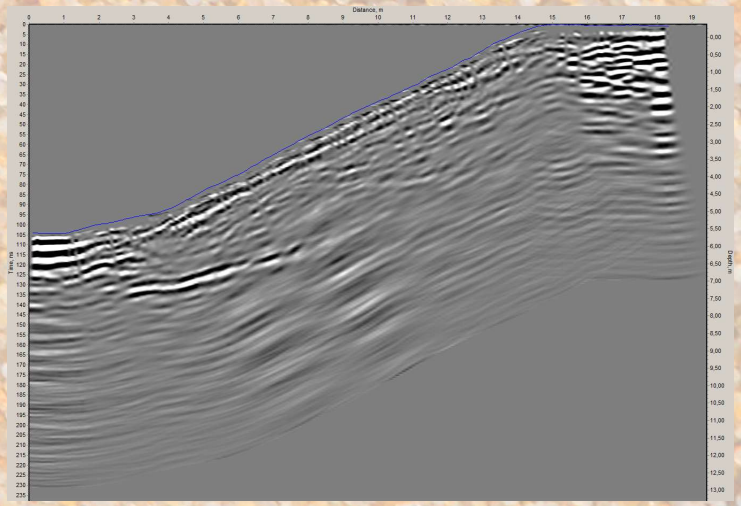
Some antenna unit have built-in inclinometer that allows to consider antenna unit orientation during the sounding. There are AB3-700i, AB3-300i and AB3-125i (VIY3-700i, VIY3-300i and VIY3-125i packages).

The Topographic correction button is available if data acquisition was made with measuring wheel. When you press the button, the program calculates zero-level of the profile taking into account surface curvature based on antenna tilt and traveled distance. Then considering tilt of the antenna unit and antenna directional pattern a new profile is calculated.

Topographic Correction



Original profile measured on a sloping surface



Result of topographic correction of the profile

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