

## C-THRU

See Thru Pavement layers & Concrete Structures and Reveal True Data that Lead to Optimal Decision-Making

2021 - 22



**See Thru Pavement layers**



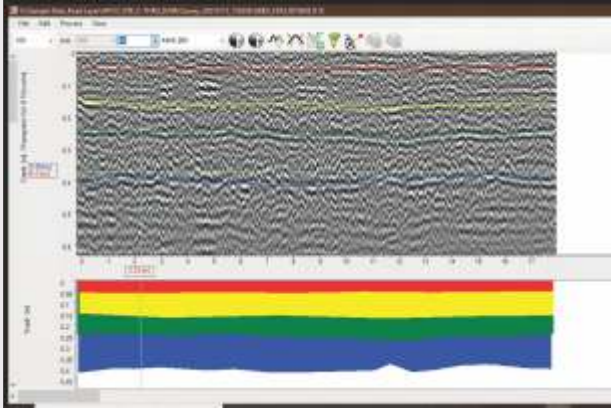
**See Thru Concrete**

GPR for scanning and real time analysis of Pavement layers & locate / map Rebar & cavities in concrete structures

### SEE THROUGH PAVEMENT LAYERS & REVEAL TRUE DATA

Road Construction companies and engineering consultants can scan pavement layers including multiple bituminous layers, WMM & GSV with high resolution and accuracy to check that pavement construction is as per specification.

**No need for repeated coring.** High speed acquisition and provided with GRED 3D HD post processing software for semi automatic to automatic post processing of acquired data.



C-thrue visualizations : Pavement layer data, layer by layer upto 80 cms depth



Automatic position and navigation system (Virtual Pad) increases productivity and reduces survey time.

### FEATURES AND BENEFITS

**Clearer and faster surveys:** First and deeper levels of Pavement layers and rebar detection thanks to the system's dual antenna polarisation. In case of structures, dual polarisation allows both HH & VV data to be acquired simultaneously cutting down time to scan structure.

**Fully-visible, multi-touch display:** data displayed on the screen are never obscured by the handle or the user's hand.

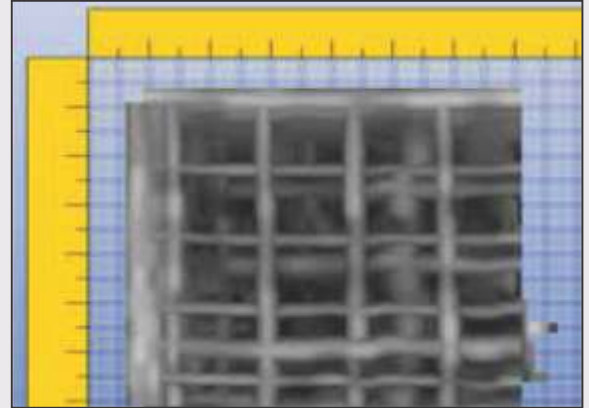
**Increased data accuracy:** an automatic position and navigation system eliminates all manual, error-prone paper grids.

**Automated data acquisition & analysis:** automatic detection of the first layer of rebars and result exportation.

### SEE THROUGH CONCRETE STRUCTURES UNIQUELY IMPROVE DECISION-MAKING

Civil and structural engineers can improve the way they evaluate and locate rebars, voids, post-tension cables, cavities, conduits and any other objects buried in structures such as bridges, large buildings & industrial structures before cutting or drilling.

- **Dual antenna polarisation** for the optimal detection of both first and deeper pavement layers and levels of rebars.
- **Virtual Pad** - Built-in, automatic, and highly accurate position and navigation system.



C-thrue visualization: dual antenna polarisation allows the optimal detection of both first and deeper levels of rebars



Optional Augmented Reality kit for real time data visualisation with more accuracy

**Pavement Layer Analysis:** No need for multiple cores. Single core sufficient for calibration. Allowing continuous non destructive capture of pavement layer data.

**Safe drill in the surveyed structure:** Improve safety drilling into concrete with rebar/void automatic insight capabilities.

**Simplified data interpretation:** optimal decision-making supported by visualization of acquired data in 2D or 3D models

**Advanced data visualization:** augmented reality for 3D data visualization and sharing, in real time or intervals after acquisition.

**Flexibility anywhere:** lightweight, compact, drop resistant and transportable system for any user operations and construction sites.

**ALL-IN-ONE, COMPACT AND PORTABLE SYSTEM**  
**2GHz HHVV DUAL POLARIZED ANTENNA FOR HIGH RESOLUTION DATA CAPTURE**



Automatic positioning kit provided as standard , to be used based on Class 1 lasers integrated in C-THRUE. No paper pad needed.



Pelican case for product safety & transportation included as part of standard supply.



**Optional**  
Wi-fi connection for real time remote control, data processing and Augmented Reality



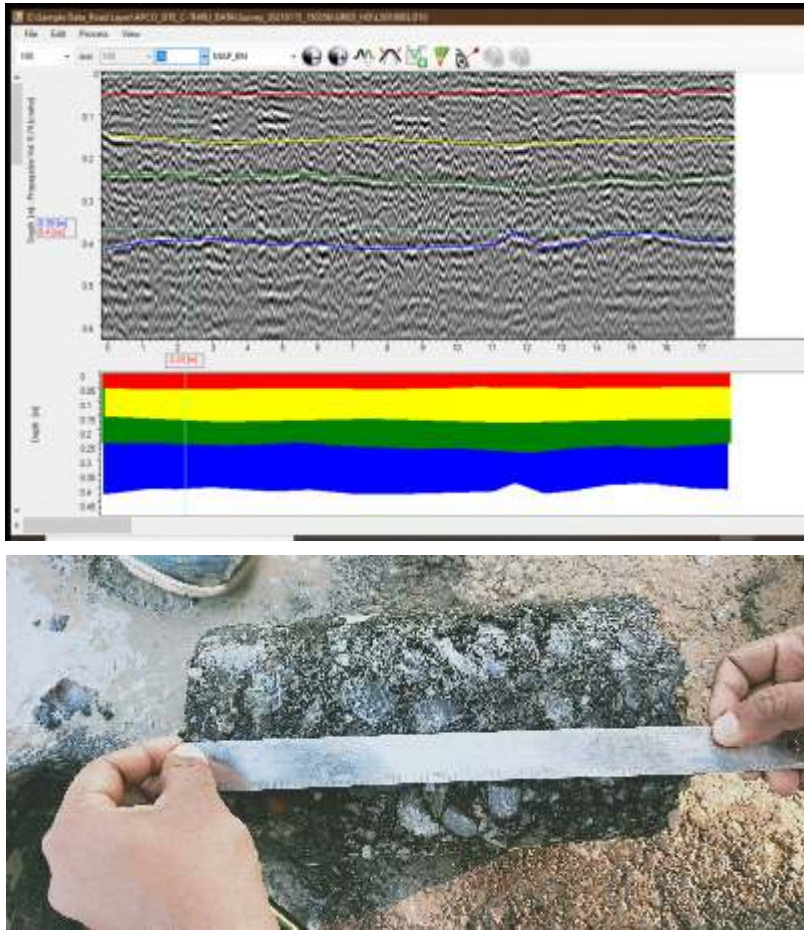
**Optional**  
1.8 meter extendable pole for using equipment on pavement or on high structures with built in remote control start / stop

| TECHNICAL SPECIFICATIONS    |   |
|-----------------------------|---|
| Antenna Center Frequency    | 2.0 GHz   |
| Number of Antennas          | 4   |
| Antenna Polarisation        | Horizontal and Vertical   |
| Number of Radar Channels    | 2 (dual-polarised antennas)   |
| Scan Interval               | Up to 10 scans/cm   |
| Depth Range                 | Up to 80 cm (up to 31.5 in.)  |
| Display modes               | B-Scan and C-scan (radar tomography)  |
| Positioning system          | "Virtual Pad" (based on 3 High safety - Class 1 laser sensors with reflective bars) |
| AC Power Conduits Detection | EM sensor integrated (50/60 Hz)   |
| Data Storage                | 32 GB   |
| Connectivity                | USB, Wi-Fi  |
| Drop Resistant              | Compliant with MIL-STD-810G   |
| Positioning system          | "Virtual Pad" (based on 3 High safety - Class 1 laser sensors with reflective bars) |
| Environmental               | IP65  |

| POWER / MECHANICAL SPECIFICATIONS |  |
|-----------------------------------|--|
| Battery                           | Li-ion battery, 15V, 3.2Ah, 3-hour runtime. Provided with AC/ DC charger |
| Dimensions (L x W x H)            | 285mm x 200mm x 160mm  |
| Weight                            | 2.4 kg with battery  |
| Display                           | 7.0 inches TFT multi-touch   |

| OPTIONAL ACCESSORIES                 |   |
|--------------------------------------|---|
| C-thrue External Controller          | Real time remote control, Data processing and representation of results in augmented reality  |
| C-thrue Pole                         | <ul style="list-style-type: none"> <li>Telescopic aluminum pole <ul style="list-style-type: none"> <li>1.8 m (6ft)</li> </ul> </li> <li>Remote control buttons</li> </ul> |
| GREED 3D HD Post Processing Software | Post processing software for semi-automatic to automatic 2D data analysis such as pavement layer by layer analysis or 3D representation of rebar                          |





### GRED 3D HD Software

For pavement layer data analysis. Post data acquisition on highways/ expressways/ roads scanned, use of post processing software is necessary for interpretation of clear layer by layer depth. GRED 3D HD software allows semi automatic to automatic post processing of pavement layer data requiring minimal human intervention allowing long lengths of kms to be post processed quickly. Pavement layers can be color coded.

As example, single core used to calibrate data based on bituminous design layers thickness 250mm (80+100+70)

The software can also be used for 3D analysis and representation of 1st and 2nd layer of rebar in concrete. Structures such as bridges, buildings etc.

| Product Configuration options   | Description   | Ordering Code              |
|---|---|----------------------------|
| C-thrue Concrete & On Spot Pavement + Concrete Scanner, Basic Kit                                       | C-thrue basic kit for concrete & on spot pavement layer scanner. C-thrue software included for onsite realtime radar data acquisition and processing and visualization in B-Scan, visualization of C-Scan (radar tomography). Supply includes C-THRUE scanner with accessories including AC/DC charger, pelican case. | 868510                     |
| C-thrue Concrete & On Spot Pavement + Concrete Scanner, Basic Kit + Remote Handle                       | Supply will include :<br>1. C-Thrue scanner, with accessories including AC/DC charger, pelican case.<br>2. C-Thrue Pole : 1.8m telescopic aluminum pole with remote control buttons.  | 868510+875951              |
| C-thrue Concrete & On Spot Pavement + Concrete Scanner, Basic kit + GRED 3D HD Software                 | Supply will include :<br>1. C-Thrue scanner with accessories including AC/DC charger, pelican case.<br>2. GRED 3D HD software for post processing 2D / 3D of acquired data.   | 868510+GRED 3D HD          |
| C-thrue Concrete & On Spot Pavement + Concrete Scanner, BASIC Kit + Remote Handle + GRED 3D HD Software | Supply will include :<br>1. C-Thrue scanner with accessories including AC/DC charger, pelican case.<br>2. C-Thrue pole : 1.8m telescopic aluminum pole with remote control buttons.<br>3. GRED 3D HD software : for post processing 2D / 3D of acquired data.   | 868510+875951 + GRED 3D HD |

#### Ordering codes for Augmented reality kit options :

|                                   |   |
|-----------------------------------|---|
| C-thrue remote desktop and AR Kit | Augmented reality kit for C-THRUE Comprising<br>a. Augmented reality software (Part no 876233 )<br>b. Remote desktop software (to manage the data collection by PC Panasonic FZ G1 (Part no. 876235)<br>c. Marker C-thrue and AR (Part no 875987) |
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