



# Cart400

Operating manual

Version 1.0

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# 1 Introduction

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Thank you for purchasing the CART400 system, the ultimate system for utility detection.

Together with the RAMAC Monitor for data acquisition you have a straightforward one-man operated array system for utility detection and other high-resolution applications.

We at Malå GeoScience welcome comments from you concerning the use and experience of this equipment, as well as the contents and usefulness of this manual. Please take the time to read through the assembling instructions carefully and address any questions or suggestions to the following:

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## 1.1 Unpacking and Inspection

Great care should be taken when unpacking the equipment. Be sure to verify the contents shown on the packing list and inspect the equipment for any loose parts or other damage. All packing material should be preserved in the event that any damage occurred during shipping. Any claims for shipping damage should be filed to the carrier. Any claims for missing equipment or parts should be filed with Mala GeoScience.

## 1.2 Repacking and Shipping

If original packing materials are unavailable, the equipment should be packed in a wooden box with at least 80 mm of absorbing material. Do not use shredded fibres, paper wood, or wool, as these materials tend to get compacted during shipment and permit the instruments to move around inside the package.

## 1.3 Limited Warranty and Liability

Malå Geoscience warrants that, for a period of 12 months from the delivery date to the original purchaser, Malå Geoscience products will be free from defects in materials and workmanship. **Except for the foregoing limited warranty, Malå Geoscience disclaims all warranties, express or implied, including nay warranty of merchantability or fitness for a particular purpose.** Malå Geoscience will repair and replace parts or equipment which are returned to Malå Geoscience, transportation and insurance pre-paid, without alteration or further damage, and which in Malå Geoscience's judgement, were defective or became defective during normal use.

**Malå Geoscience assumes no liability for any direct, indirect, special, incidental or consequential damages or injures caused by proper or improper operation of its equipment or software, whether or not defective.**

## 2 Hardware and Start Up

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### 2.1 Hardware

The CART400 is a 16 channel array system where the antenna elements, cart control unit and power distribution are mounted in a covered fibreglass box, easily mounted on a small wheel carriage. Such as a car, a tractor or a lawn-mover. See picture below.

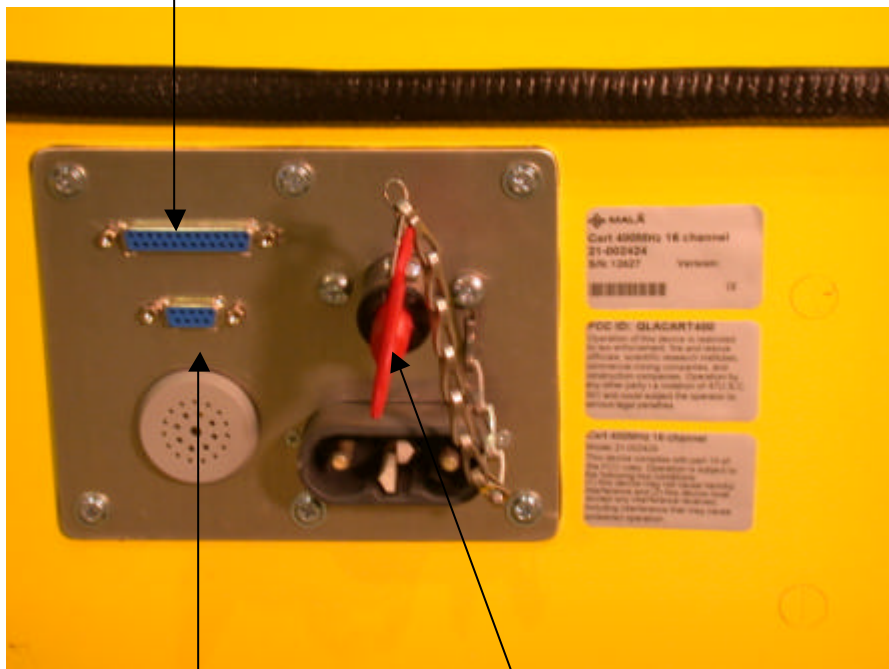


## 2.2 Start up

When initialising Cart 400 measurements the following easy steps are made to connect and start up the whole GPR system:

1. Connect the DC power input to a fully charged 12 V battery(car battery) or connect it to the 12 V system of the vehicle (Se picture).
2. Connect the laptop to the DSUB-25 connector and the measuring wheel to the DSUB-9 connector.
3. Turn on the power switch on the Cart400. Turn on the laptop and start the Wincart software. Your Cart400 is now ready for operation.

Laptop



Measuring  
wheel

Power switch