

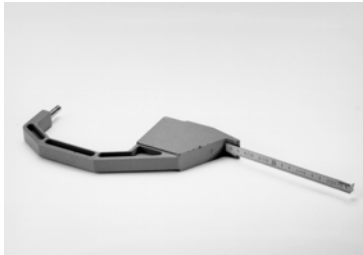
## Accessories

Sensor firmware and office software upgrades are certainly the big, noticeable improvements. News about these upgrades are usually widespread. But there is more than this! **Accessory improvements** make your System500 more effective and your life a lot easier.

A couple of accessories have been added to the GPS product basket lately. In this newsletter, we would like to introduce them to you.

## Instrument Height Meter GHM007

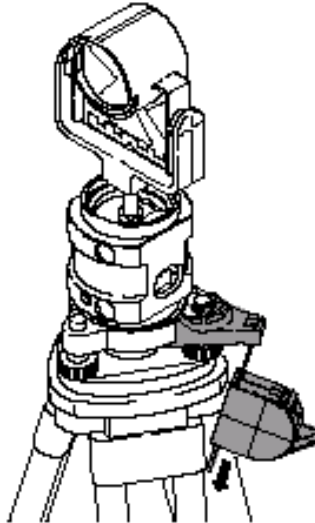
How do you measure the antenna height on a tripod set-up? The majority of GPS users probably work with the height hook. It is inserted into the antenna carrier and the height to the point on the ground is measured.



Picture 1: Height Hook

There might however be a customers using TPS and GPS instruments. Until now, no equivalent to the height hook existed for TPS. However, now with the **Instrument Height Meter GHM007 plus Spacing Bracket GHM196** you can measure the metric TPS instrument height rapidly. And in addition, you can use

the same tool to determine the height of a GPS antenna on a tripod.



Picture 2:  
Instrument Height Meter and Spacing Bracket

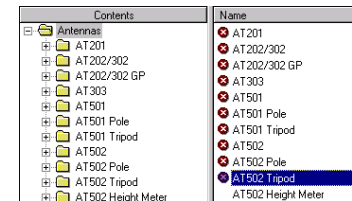
After the instrument set-up, the spacing bracket is clicked onto the tribrach, the tape measure is inserted and the measuring tongue is moved down to the point on the ground. The perpendicular height of the instrument is read off directly.

Originally, the GHM007 was designed for instruments with a tilting axis height of 196 mm. All necessary conversions are taken into account on the scale. The second side can still be used as normal tape measure. The side for height reading of the instrument is marked with additional triangles to avoid confusion.

Even though the GHM007 scale is designed for instruments with a tilting axis height of 196 mm, you want

to be able to type in the height reading directly into the 'Ant Height' field on the sensor when applying the Instrument Height Meter for GPS. For GPS tripod set-up, the vertical height reading plus the vertical offset of 0.3600 m (bottom of height hook to base of thread of the carrier) refer to the base of the thread of the Leica carriers. The height of a carrier is 145.5 mm. This means that the difference of -0.0505 m between the TPS tilting axis height and the carrier height must be taken into account. The best remedial action is the **definition of a new antenna type** with a vertical offset of -0.0505 m.

Create the new antenna type in SKI-Pro. It is only here that the phase centre eccentricities are taken over when copying an antenna type definition. Defining the antenna type on the sensor does not copy the eccentricity values and will therefore lead to wrong results.



Picture 3:  
Antenna Management for creating a new antenna type in SKI-Pro

To create the new antenna in SKI-Pro, go to the **Antenna Management**. In the Report View (right window), highlight the appropriate antenna, e.g. AT502 Tripod. Copy and paste, then rename the antenna with a meaningful

name like 'AT502 Height Meter'.

Right click on the new antenna to access the antenna properties. On the General page, change the **Vertical offset** to **-0.0505**.



Picture 4:  
Antenna Properties in SKI-Pro

Copy the antenna onto a PC card, then insert the PC card into the sensor and choose **04 Antenna Info** from the **TRANSFER/ Menu** panel. This will transfer the antenna from the PC card to the sensor system RAM.

**All-on-the-pole Accessories Kit GHT37**



Picture 5:  
Balanced All-on-the-Pole solution

The original All-on-the-Pole solution has been improved by a **more balanced** operation

of the pole where the sensor position is parallel to the pole.

The All-on-the-Pole Accessories Kit **GHT37** includes an antenna and a terminal cable with optimised length to operate the set-up as RTK rover. The kit is to be used in combination with the **GHT26** to fix sensor and terminal to pole as for the backpack set-up.

The new All-on-the-Pole Accessories Kit again highlights the extreme flexibility in morphology of Leica's GPS System 500.

**Repeater Box GHT38**

Overcome restrictions of radio range by applying a repeater. A repeater is a specially configured radio modem. Usually, it is set-up somewhere in the middle between reference and rover on a tripod with radio antenna and battery. It receives the RTK data from the reference and broadcasts the data further to the rover. Consequently, the overall radio range increases.

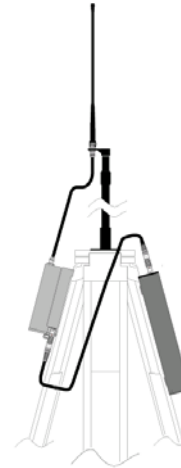
Repeaters from Sateline fit into the Leica housing GFU5. Those from Pacific Crest fit into the GFU6 housing.



Picture 6: Repeater Box

With the **Repeater Box GHT38**, the GFU5 and GFU6

housings can be attached to the tripod. The power supply for the radio modem is enabled with an external battery and a cable connected to the repeater box.



Picture 7:  
Repeater set-up with Repeater Box

**3 m antenna pole?**

For difficult fieldwork conditions many customers ask for a **3 m antenna pole**. You cannot purchase one directly, but be flexible and create your own 3 m Antenna pole!

Normally, you will work with a 2 m antenna pole consisting of a bottom section and a top section. For the aluminium pole, this is the GLS17 plus GLS18. For the carbon fibre pole, it is the GLS20 plus GLS21. Additionally, if you prefer a top section pole with stub (GLS19 or GLS22), you need the GAD31 screw-to-stub adapter to work with an antenna pole of exactly 2.000 m.

For a 3 m antenna pole, you will just need an **additional top section pole** with 5/8" screw (GLS18 or GLS20). Place that 1 m long extension element between your bottom



and top section and you can continue your field- work with a 3 m antenna pole. Of course you will need an additional **extension for the antenna cable** to connect the sensor with the antenna.

During the survey, please remember that the antenna height is not longer 2.000 m but 3.000 m.

**Remember**

- Contact your nearest Leica selling unit or dealer for more information and orders.
- It is possible to use the TPS Instrument Height Meter GHM007 plus Spacing Bracket GHM196 also for

GPS. In this case, create a new antenna type in SKI-Pro using a vertical offset of -0.0505 m.

- The new Accessories Kit GHT37 guarantees a stable all-on-the-pole solution.
- The repeater box is designed to attach a Sateline or Pacific Crest radio in the Leica housings to the tripod.
- A 3 m antenna pole can easily be created: simply add a 1 m extension pole (GLS18 or GLS21) between the bottom and top sections pole and use it together with an extension for the antenna cable.

Picture 8: 3 m antenna pole

**Season Greetings**

All the best for the holidays and a Happy New Year with success in both your working and your private lives. But above all, we wish you a year in peace and health. We hope, the newsletter accompanied you with some useful information through the year. We are looking forward to working further with you again and we will be back in January with the next edition of the GPS Newsletter.



**Ideas for Future Newsletters...**

If you have any ideas or wishes for topics that you would like to be discussed in a future newsletter, please contact your local selling unit or representative. These ideas can then be passed to Heerbrugg. Thank you.