

# Topcon receiver withstands global warming



*“Researching global warming  
from inside the ice”*

*“We still could recover all  
important information”*

In the Briksdalsbreen glacier in Norway a team of British researchers is looking for answers to the problem of global warming... from inside the ice. Kirk Martinez is Senior Lecturer at the School of Electronics and Computer Science at the University of Southampton, UK and leads a team of researchers which carries out groundbreaking research on the melting of glaciers.

“We use two Topcon Legacy receivers to precisely measure the location of a base station which permanently lives on the ice. The base station is responsible for gathering data from special probes that are embedded deep inside the glacier. Six times a day these probes record environmental observations such as temperature, tilt and pressure. The base station transmits this data, either via radio down the valley or by mobile-phone text messages.”

“A special tripod was designed to hold the antennas and sensors of the base station; this was anchored to the ice (15m down a borehole) and rocks on the base. The glacier and foreland were mapped beforehand with Topcon GPS. This way we could pick the study sites on the glacier and see exactly where they were in relation to the previous years’ on a FC-100 handheld field computer.”

“After the summer of 2006 we received an email that the base had fallen down a deep crack in the glacier. In November the base was seen floating in the lake at the foot of the glacier. The whole ice front and the base station had fallen into the lake. A BBC News film crew even came along on the rescue mission. In the end we found it, but the ripping off of cables had damaged connectors on the case so water got in. Amazingly the compact flash card in the computer was intact (after a night over the log fire!). And so was the Topcon GPS receiver. So we could still recover and use all the important data about global warming.”

 **TOPCON**

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