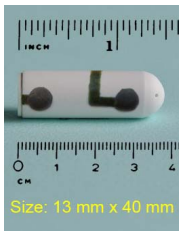




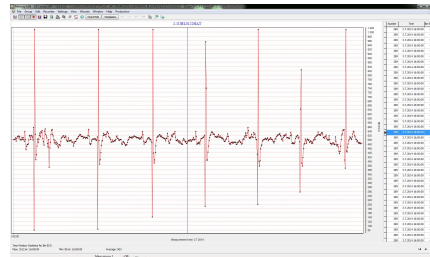
Leadless heart rate logger - large memory increase for ECG validation



Star-Oddi's leadless heart rate and temperature logger DST milli-HRT has been used successfully in various fish species. The logger can now store substantially more ECG validation data in memory, yielding more ECG data to the researcher through a large memory increase of the logger.

16-fold memory increase

Heart rate (beats per minute) and temperature is recorded at a defined sampling interval but the ECG can also be recorded at certain periods for ECG validation. The memory capacity for storing ECG has gone up 16-fold, from 174 to 2,785 raw ECG measurements. Each ECG buffer consists of 600 heart rate measurements. The graph shows ECG data from mackerel, recorded with DST micro-HRT.



The increased memory is available in the DST milli-HRT which is 13mm x 39.5mm, weighing 11.8 g. Star-Oddi also offers a smaller version of the heart rate and temperature logger, DST micro-HRT, which is 8.3mm x 25.4mm and weighs 3.3 g.

Minimally invasive implantation

Star-Oddi's heart rate logger has received great response from fish biologists due to the leadless design which enables quick and minimally invasive implantation.

Since its release almost two years ago it has reached widespread use, for example in fish like salmon, trout, cod, pike and sea bass. The logger provides scientists with ECG derived heart-rate and temperature measurements for periods lasting days up to months.

Implantation of heart rate sensor in fish

To demonstrate the ease of implantation in fish the following applies: Push the logger as close to the pericardium as possible, try to ensure the electrodes are in contact with viscera. Attach the tag inside to immobilize it, using non absorbable suture, for example silk suture. See a video of implantation in cod [here](#).

Season's greetings!

The Star-Oddi team wishes you happy holidays and a prosperous new year!



Published research using our sensors



You can view an extensive collection of scientific papers and posters using our sensors in various types of aquatic and fisheries research which can be found on our website. To view the research, please click on the following [link](#).



If you have a story or research to share with us, [please contact us](#).

Starmon mini temperature logger - free cable and software



With the purchase of a mini submersible logger you will receive communication application software free of charge. This software is available throughout January. The mini logger is known for its durability, accuracy, and ease of use, making it a great choice for long-term studies. It offers a fast response time. Please contact [oddi.com](#) for further information.

Fun fact: About the Yule Lads



13 Yule Lads are said to come down the mountain one each night. Children in Iceland are supposed to leave a shoe on their windowsill before going to bed each night. A little gift is left in the shoe that came down from the mountain. If the shoe has been misbehaving, there might be a Yule Ladvic instead.

Christmas dinner. If a child is naughty, the Yule Ladvic immediately. Gryla can't lay her hands

An old tradition in Iceland is, that 13 days before Christmas the Yule Lads start coming down the mountain one each night. Children in Iceland are supposed to leave a shoe on their windowsill before going to bed each night. A little gift is left in the shoe that came down from the mountain. If the shoe has been misbehaving, there might be a Yule Ladvic instead.

The Yule Lads aren't as mean as they are often portrayed. They are very well-mannered. The season begins on December 12th, when the first Yule Ladvic (Sheep-Cote Clod) descends from the mountain. Then they leave again to the mountain in the same order until the last one, Kertasnikir (Candle-Stealer) arrives on January 6th, Christmas day.








Data Storage Tags - DSTs

Star-Oddi has been manufacturing Data Storage Tags (DSTs) since 1993. The data loggers are used in various studies, such as fish tagging studies and oceanography. You can view our product range [here](#). The following are available:

Star-Oddi Online

Now you can find product updates, video tutorials and general information about Star-Oddi on:



-  **Temperature**
-  **Pressure**
-  **Conductivity**
-  **Tilt**
-  **Magnetic field strength**
-  **Acoustic receiver**
-  **Light intensity**

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