

# Breaking Barriers: Seamless Integration of SoHo Implantable Telemetry with Promethion Metabolic Measurements

## The Challenge

Dr. Eleanor McKay and her research team at University of Lausanne needed to monitor core body temperature during metabolic experiments in mice using the Sable Systems Promethion temperature cabinet. However, Dr. McKay, new to implantable telemetry, encountered a critical challenge—traditional implantable telemetry systems require wired individual receivers to be placed under each cage. This setup poses major difficulties within the temperature cabinet, as the metal enclosure can cause signal interference and installing individual receiver bases under each cage is highly impractical. Space inside the cabinet is limited, adjusting cage heights would necessitate recalibration of the XYZ laser beams, and the added complexity of extra cabling running in and out of the cabinet creates further complications.

## The Solution

The DSI Technical Support team assisted Dr. McKay's team in setting up the SoHo Telemetry system and testing its compatibility with the Promethion cabinet. A single SoHub transceiver was strategically placed at the bottom right of the cabinet without requiring any modifications to the cage configuration. 12 SoHo-X00 implants were then placed inside the cages (without implantation) to assess system performance.

Despite the challenges posed by the caging configuration and metal enclosure, the SoHub successfully collected data from all 12 implants—including the implant in the top left corner, the farthest point from the transceiver.

Since then, Dr. McKay's team has conducted a full study, seamlessly capturing the required data from within the cabinet and synchronizing it with indirect calorimetry measurements.

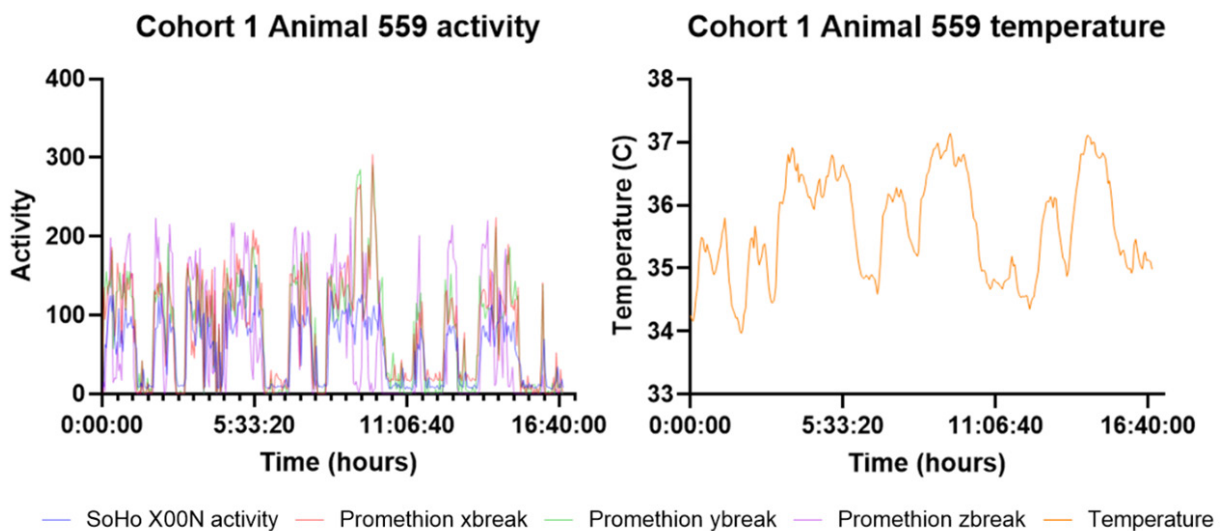


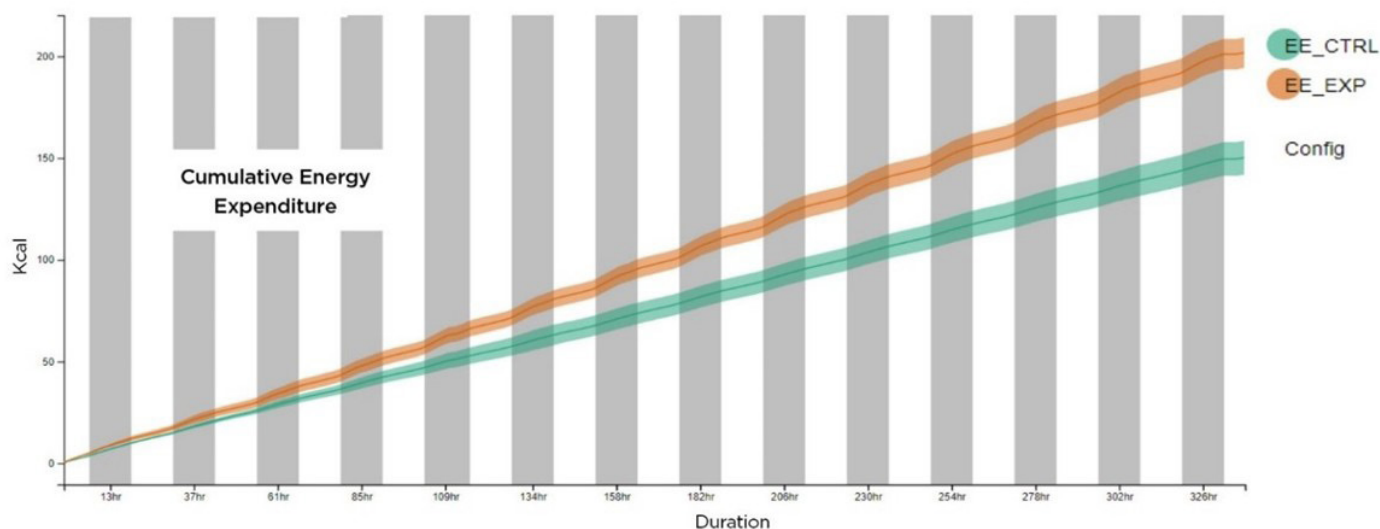


## The Outcome

By incorporating DSI's cutting-edge SoHo Implantable Telemetry solution into their existing Promethion system, Dr. McKay's team successfully captured core body temperature, locomotor activity, and energy expenditure simultaneously. This integration enabled them to precisely correlate body temperature and activity with energy expenditure, providing a comprehensive view of metabolic function.

Dr. McKay shared the following temperature, activity (measured both through the SoHo implant, and via the Promethion xyz laser beam breaks), and energy expenditure data collected using the integrated SoHo and Promethion Systems.





When reflecting on her experience with the integrated system, Dr. McKay said, “So far, I’ve used SoHo to perform temperature telemetry experiments within indirect calorimetry cages in the Sable Systems Promethion temperature cabinet. I was delighted that the Bluetooth signal had no problems working with the metal temperature cabinet. This SoHo Bluetooth setup has saved so much time and effort trying to set up old receiver bases around indirect calorimetry cages in temperature cabinets. Additionally, the ability to do temperature telemetry on group-housed animals opens up a whole new experimental paradigm. I’ve always found the DSI teams very helpful and prompt in replying to inquiries and sorting out any small technical problems.”



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