

# The Orbit mini. Plug and paint.

- Simultaneous recording from four lipid bilayers
- Low noise, high bandwidth recordings
- Temperature control - active cooling and heating
- Cost-efficient experiments with disposable MECA chips

## Introducing the **Orbit mini** – Nanonion's entry level device for bilayer recordings

Bilayer recordings typically mean tedious waiting for bilayer formation, protein introduction and eventually ion channel activity. The Orbit mini combines the parallel membrane preparation and measurement techniques known from the Orbit 16 with a maximum of portability and ease of use.

### Key features of the **Orbit mini**:

- Fast formation of four painted lipid bilayers
- Simultaneous low noise, high bandwidth recordings from four bilayers
- No time consuming disassembly or cleaning



Orbit mini contains a built-in, miniaturized four-channel amplifier, allowing low noise recordings at high bandwidth without the need for any additional equipment – you could virtually conduct experiments while travelling by train! Due to the unique design of the Orbit mini, the measurement chamber temperature can be actively controlled without additional noise generation.

Orbit mini

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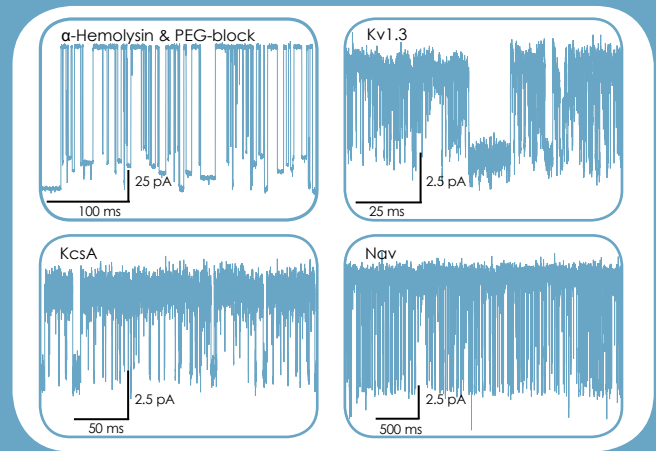
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**nanion****Turn-key device for parallel lipid bilayer recordings**

A complete Orbit mini platform consists of the main recording unit with a built-in four channel amplifier (Elements), and an computer-controlled, environmental-control unit for active cooling and heating of the recording chamber. Ionera's  $\sqrt{16}$  MECA disposable chips are used for manual painting of lipid bilayers and parallel recording from four bilayers.

The planar lipid bilayers are done on the 4 channel Micro Electrode Cavity Array chip (MECA, Ionera), by manual painting of solvent containing lipids. On the right, the data image shows recordings from 4 different ion channels: Nav sodium channel,  $\alpha$ -hemolysin with poly-disperse PEG blocks, Kv1.3 and KcsA potassium channels.



Orbit mini with big brother Orbit 16.

## Orbit mini Set-Up and Consumables

**Technical details:**

- Turn-key system for parallel bilayer recordings
- Four built-in amplifier recording channels
- Temperature control - active cooling and heating
- Computer-controlled temperature regulation
- Small foot print
- USB-computer connection
- Cost-efficient consumables



**Ionera**  
Wherever ions flow...

**MECA – Micro Electrode Cavity Array (Ionera)**

The MECA recording substrate contains a 2 x 2 array of circular microcavities in a highly inert polymer. Each cavity contains an individual integrated Ag/AgCl-microelectrode. The bilayer is formed by painting, with high success rates for functional bilayers. The MECA-chip has been validated with a number of different ion channels including KcsA, gramicidin,  $\alpha$ -hemolysin, Kv1.3, Nav etc.

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