Device part number

GRD-MK1 or
GRD-X5B003

Device name

GridION Mk1

Short description

GridION Mk1 is a cost-effective and compact benchtop system offering on-demand sequencing with integrated real-time data processing. With the capacity to run five flow cells either concurrently or individually and a total yield of up 150 Gb, GridION Mk1 provides busy labs and service providers with cost-efficient access to the advantages of long-read, real-time nanopore sequencing. Integrated, high-performance data processing alleviates the need for complex IT infrastructure.

Product overview

The Oxford Nanopore Technologies® GridION™ Mk1 is a compact benchtop sequencing system. It allows up to five sequencing experiments to be run concurrently or individually. Users may choose to use as much or as little of this total resource at any one time. GridION Mk1 also allows users to offer nanopore sequencing as a service.

The GridION Mk1 provides users with five sequencing ports where MinION flow cells or Flongle adapters with flow cells can be connected, as well as a high performance integrated computer and basecalling accelerator. The device can basecall, in real-time, the data generated by five flow cells/Flongles. The current chemistry and software enables generation of up to 150 Gbases of data during a GridION Mk1 run.

Setting up a GridION Mk1 requires minimal infrastructure with no need for facility upgrades. A new device requires only a power source, and network connectivity via an Ethernet port.

There are three USB 3.0 ports available for peripherals, e.g. keyboard and mouse. Monitors must be connected via DisplayPort.

The device is powered from the mains via the C13 cable, and is switched on via a power button on the front.
Technical specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size and weight</td>
<td>H 220 x W 365 x D 370 mm, 14.4 kg</td>
</tr>
<tr>
<td>Power</td>
<td>650 W</td>
</tr>
<tr>
<td>Compute spec</td>
<td>4 TB SSD Storage, 64 GB RAM, Intel i7-10700K CPU for OS and orchestration, basecalling accelerator</td>
</tr>
<tr>
<td>Pre-loaded software</td>
<td>Linux OS, GridION OS <em>(MinKNOW inside)</em>, Guppy software</td>
</tr>
<tr>
<td>Environmental conditions</td>
<td>System functional range +5°C to +40°C</td>
</tr>
<tr>
<td></td>
<td>Designed to sequence at +18°C to +25°C</td>
</tr>
</tbody>
</table>

Shipping and logistics

The Oxford Nanopore Technologies GridION Mk1 device is stored and shipped at ambient temperature (+15–25°C).

Please note that the GridION Mk1 is shipped separately to the kits and flow cells.

The delivery charge of $2000 is included in the package price. Additional delivery charges for the consumables are calculated when a quote is raised or during checkout. Once an order is made, the delivery ID and delivery information can be tracked in the Store.

IT requirements

GridION Mk1 IT requirements

Safety and legal info
**Intended use of the GridION Mk1 device**

Oxford Nanopore Technologies GridION Mk1 device is an electronic analysis system for use in scientific research. The core technology is built around a nanopore that is able to detect single molecule events such as nucleic acids (DNA/RNA).

**This product is for research use only.**

The safety information below provides you with the details needed to install and use the system safely.

**Electrical information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>100–240 V (50/60 Hz)</td>
</tr>
<tr>
<td>Operating current</td>
<td>8 A maximum</td>
</tr>
<tr>
<td>Maximum power</td>
<td>650 W</td>
</tr>
</tbody>
</table>

**Labels on the instrument**

Label on the GridION Mk1:

![GridION x5 - GRD-X5B003 Serial: GXB01498](image1)

Label on the SpotON Flow Cell:

![Product code: FLO-MIN106 R9 Version Description: Flow Cell Mk 1 Spot-ON Pk.1](image2)

**Emergency procedures**

In case of emergency, switch the GridION Mk1 off at the power switch and unplug the power cable from the back of the device.

**Declaration of conformity**
The GridION conforms to the EMC and Electrical Safety directives as outlined in the EC Declaration of Conformity.

Software license and device warranty

The software licence and device warranty contract ensures your instrument is performing optimally by providing the latest up-to-date hardware and software. The contract guarantees that Oxford Nanopore Technologies support obligations are delivered during the contract period as laid out in sections 4 and 7 of the Nanopore Product Terms and Conditions.

This includes:
- Software updates upon release
- Hardware updates on release
- Return and Replace policy
The service contract extends our warranty to cover the instrument after your initial purchase contract has expired.

What’s in the box

The GridION Mk1 is shipped together with a C13 cable specific to the country of delivery, and five configuration test cells (CTCs).

Configuration is the process of testing that communication between the GridION Mk1 device and the control software is operational prior to experimental work being performed. This is carried out in the absence of any chemistry and uses a specific flow cell known as the Configuration Test Cell (CTC).

The GridION Mk1 is packed into a single box that contains everything needed for installing the device. The shipping weight is ~11 kg, meaning no special equipment is required for installing the GridION Mk1 in your laboratory.
Product cross-compatibility

The GridION Mk1 can be used together with:

Flow cells
- FLO-MIN106D
- FLO-MIN112

Kits
FLO-MIN106D flow cells are suitable for all sequencing kits:
- Ligation Sequencing Kit (SQK-LSK112)
- Ligation Sequencing Kit XL (SQK-LSK112-XL)
- Native Barcoding Kit 24 (SQK-NBD112.24)
- Native Barcoding Kit 96 (SQK-NBD112.96)
- Ligation Sequencing Kit (SQK-LSK110)
- Ligation Sequencing Kit (SQK-LSK109)
- Ligation Sequencing Kit XL (SQK-LSK109-XL)
- Cas9 Sequencing Kit (SQK-CS9109)
- PCR-cDNA Sequencing Kit (SQK-PCS111)
- PCR-cDNA Sequencing Kit (SQK-PCS109)
- PCR-cDNA Barcoding Kit (SQK-PCB109)
- Direct cDNA Sequencing Kit (SQK-DCS109)
- Direct RNA Sequencing Kit (SQK-RNA002)
- Rapid Sequencing Kit (SQK-RAD004)
- Rapid Barcoding Kit (SQK-RBK004)
- Rapid Barcoding Kit 96 (SQK-RBK110.96)
- Rapid PCR Barcoding Kit (SQK-RPB004)
- 16S Barcoding Kit (SQK-RAB204)
- 16S Barcoding Kit 1-24 (SQK-16S024)
- PCR Sequencing Kit (SQK-PSK004)
- PCR Barcoding Kit (SQK-PBK004)

FLO-MIN112 flow cells can be used with the V12 Sequencing Kits:
- Ligation Sequencing Kit (SQK-LSK112)
- Ligation Sequencing Kit XL (SQK-LSK112-XL)
- Native Barcoding Kit 24 (SQK-NBD112.24)
- Native Barcoding Kit 96 (SQK-NBD112.96)

Software
Basecalling:
- MinKNOW
- Guppy

Basecalled reads are available as .fast5 and FASTQ files.

Downstream analysis:
- EPI2ME
- Oxford Nanopore-developed tools and pipelines
<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes made</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 2023</td>
<td>V7</td>
<td>In &quot;Technical specifications&quot;, the compute spec has been updated to Intel i7-10700K CPU.</td>
</tr>
<tr>
<td>January 2023</td>
<td>V6</td>
<td>Update to the EC Declaration of Conformity document</td>
</tr>
</tbody>
</table>
| May 2022   | V5      | - Updates to the device part numbers (now both GRD-MK1 and GRD-X5B003 are available)  
- The functional temperature range for electronics has been updated to +5°C–+40°C |
| Feb 2022   | V4      | - Updates to the device part number, product overview and illustration of device components and ports  
- Updates to kit and flow cell compatibilities |
| Nov 2020   | V3      | - Updates to kit compatibilities                                              |
| Feb 2020   | V2      | - Updates to the CE label and Declaration of Conformity  
- Updated product cross-compatibility list |