Device part number

MIN-101B

Device name

MinION Mk1B

Short description

MinION is a powerful, portable sequencing device that delivers cost-effective and real-time access to gigabases of long-read sequencing data. Small enough to fit in a pocket and powerful enough to deliver up to 30 Gb data, the USB-powered MinION allows researchers to rapidly generate actionable biological insights across a wide range of application areas.

Product overview

The Oxford Nanopore Technologies® MinION™ is an electronic device that provides the interface between the user’s computer (or MinIT device) and the nanopore sensor array. The MinION powers to the application-specific integrated circuit (ASIC), performs temperature control and transfers data to the PC through a single USB 3.0 port. The MinION Mk1B can be used with MinION flow cells and Flongle adapter and flow cells. The MinION device can be used for DNA and RNA sequencing. The MinION is operated using the MinKNOW™ software, which controls the device, experimental scripts and also performs basecalling.

Technical specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size and weight</td>
<td>W 105 mm x H 23 mm x D 33 mm</td>
</tr>
<tr>
<td>Power</td>
<td>5 W</td>
</tr>
<tr>
<td>Ports</td>
<td>USB 3.0</td>
</tr>
<tr>
<td>Environmental conditions</td>
<td>Designed to sequence at 18°C to 24°C*. Users can adapt this for other temperature requirements</td>
</tr>
</tbody>
</table>

* Functional range of electronics +5°C to +40°C

Shipping and logistics

The Oxford Nanopore Technologies MinION device is stored and shipped at ambient temperature (2–25°C). MinION devices are shipped either in a padded envelope or a shipping box with flow cells and reagents.

Please note that the MinION is shipped separately to the kits and flow cells in the Starter Pack.

Products are shipped to customers within the USA and EU Monday to Thursday. Shipments to Canada, Norway, Korea and Japan are expedited Monday to Wednesday; with Australia and New Zealand leaving our warehouses on a Friday. Shipments to the rest of the world are made on Mondays to allow the full working week for packages to arrive. The delivery charges 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

MinION IT requirements
Safety and legal info

Oxford Nanopore Technologies MinION Mk1B device is an electronic analysis system for use in scientific research.

This product is for research use only.

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

**MinION electrical output values:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>5 V</td>
</tr>
<tr>
<td>Operating current</td>
<td>800 mA for 10 k</td>
</tr>
<tr>
<td></td>
<td>900 mA for 33 k</td>
</tr>
<tr>
<td></td>
<td>1 A maximum</td>
</tr>
<tr>
<td>Maximum power</td>
<td>5 W</td>
</tr>
</tbody>
</table>

**Labels on the instrument**

Label on the MinION Mk1B:

![Label on MinION Mk1B]

Label on the SpotON Flow Cell:

![Label on SpotON Flow Cell]

**Emergency procedures**

In case of emergency, switch the computer off at the power switch (or switch off the MinIT at the power source) and unplug the USB 3.0 cable.

**Declaration of conformity**

...
The MinION Mk1B conforms to the EMC and Electrical Safety directives as outlined in the EC Declaration of Conformity.

International standards

The MinION Mk1B is certified to the following international standards:

<table>
<thead>
<tr>
<th>Certification</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET; UL61010/CSA-C22.2 No. 61010, third Edition: Electrical Equipment for Measurement, Control and Laboratory Use, Revision: May 11, 2012</td>
<td>USA and Canada</td>
</tr>
<tr>
<td>RCM compliance</td>
<td>Australia and New Zealand</td>
</tr>
</tbody>
</table>
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 MinION is shipped together with a USB cable and a Configuration Test Cell.

Configuration is the process of testing that communication between the MinION device and the control software on the host computer 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 USB 3.0 cable is used to connect the MinION device to the host computer. The crimped connector end is attached to the USB 3.0 port on the MinION and the flat end attaches to a USB 3.0 port on the host computer.

Product cross-compatibility

The MinION can be used together with:

**Flow cells**
- FLO-MIN106D
- FLO-MIN114
- FLO-MIN112 - *legacy*
- FLO-FLG001

**Kits**
FLO-MIN106D flow cells are suitable for most sequencing kits:
- Ligation Sequencing Kit (SQK-LSK110)
- Ligation Sequencing Kit (SQK-LSK109)
- 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 PCR Barcoding Kit (SQK-RPB004)
- 16S Barcoding Kit (SQK-RAB204)
- PCR Sequencing Kit (SQK-PSK004)
- PCR Barcoding Kit (SQK-PBK004)
- Field Sequencing Kit (SQK-LRK001)
- Ligation Sequencing Kit (SQK-LSK112) - legacy
- Ligation Sequencing Kit XL (SQK-LSK112-XL) - legacy
- Native Barcoding Kit 24 (SQK-NBD112.24) - legacy
- Native Barcoding Kit 96 (SQK-NBD112.96) - legacy

FLO-MIN114 flow cells can only be used with the V14 Sequencing Kits:
- Ligation Sequencing Kit V14 (SQK-LSK114)
- Native Barcoding Kit 24 V14 (SQK-NBD114.24)
- Native Barcoding Kit 96 V14 (SQK-NBD114.96)
- Rapid Sequencing Kit V14 (SQK-RAD114)
- Rapid Barcoding Kit 24 V14 (SQK-RBK114.24)
- Rapid Barcoding Kit 96 V14 (SQK-RBK114.96)
- Ultra-Long DNA Sequencing Kit V14 (SQK-ULK114)

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

**Software**

**Basecalling:**
- MinKNOW
- Guppy
- Dorado

Basecalled reads are available as .fast5, .POD5 and FASTQ files.

**Downstream analysis:**
- EPI2ME
- Oxford Nanopore-developed tools and pipelines
- Customer-developed tools and pipelines

**Change log**
<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes made</th>
</tr>
</thead>
<tbody>
<tr>
<td>24th March 2023</td>
<td>V4</td>
<td>- The Declaration of Conformity document has been updated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The compatibilities list has been updated</td>
</tr>
<tr>
<td>August 2022</td>
<td>V3</td>
<td>- The Technical Specifications table has been updated to say &quot;Functional range of electronics +5°C to +40°C&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cross-compatibilities have been updated to include the Ligation Sequencing Kit V14 (SQK-LSK114) and the R10.4.1 flow cells (FLO-MIN114)</td>
</tr>
<tr>
<td>Feb 2022</td>
<td>V2</td>
<td>- &quot;What's in the box&quot; image has been updated to reflect the new MinION packaging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Updates to kit and flow cell compatibilities</td>
</tr>
<tr>
<td>Nov 2020</td>
<td>V2</td>
<td>Updates to kit compatibilities</td>
</tr>
</tbody>
</table>