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. You may choose to use as much or as little of this total resource at any one time. GridION Mk1 also allows you to offer nanopore sequencing as a service.
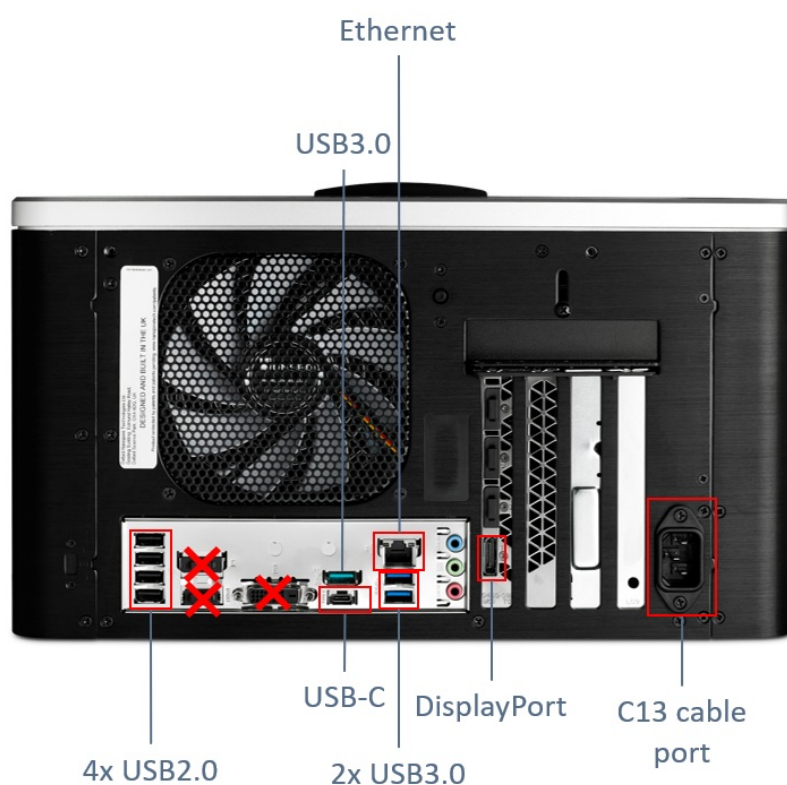
The GridION Mk1 has five sequencing ports where MinION/GridION Flow Cells or Flongle Adapters with flow cells can be connected, as well as a high performance integrated computer and basecalling accelerator. The device can basecall, in real-time, the data generated by five flow cells/Flongles. The current 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.

Sliding lid

Flow cell position indicators

Flow cells

Power button

Ethernet

USB3.0

USB-C DisplayPort C13 cable port

4x USB2.0 2x USB3.0

Technical specifications

Component	Specification
Size and weight	H 220 x W 365 x D 370 mm, 14.4 kg
Compute spec	7 TB SSD storage, 64 GB RAM, Intel i7-10700K CPU for OS and orchestration, basecalling accelerator
Pre-loaded software	Linux OS, GridION OS *(MinKNOW inside)*
Environmental conditions	System functional range +5°C to +40°C Designed to sequence at +18°C to +25°C

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

Supply voltage	100–240 V (50/60 Hz)
Operating current	6.5 A maximum
Maximum power	650 W

Labels on the instrument

Label on the GridION Mk1:

Label on the MinION/GridION Flow Cell:

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.

EC DECLARATION OF CONFORMITY

(1) Product

Model name(s): GridION Sequencing Device Mk1
Q GridION Sequencing Device Mk1

Model part number(s). GRD-MK1 / ONT-00-00155-00
GRD-X5B003 / ONT-00-00272-00
GRD-X5B003-CN / ONT-00-00273-00
Q-GRD-MK1 / ONT-00-00182-00

Equipment type: Laboratory Equipment

(2) Manufacturer

Name: Oxford Nanopore Technologies plc

Address: Gosling Building, Edmund Halley Road,
Oxford Science Park, Oxford,
OX4 4DQ
United Kingdom

(3) We, Oxford Nanopore Technologies plc, hereby declare under our sole responsibility that the above specified products conform to the following European Directives and applied harmonised standards:

EMC 2014/30/EU Electromagnetic Compatibility

LVD 2014/35/EU Low Voltage Directive

RoHS 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment. Amended by 2015/863
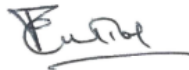
(4) Harmonised standards applied:

EMC EN 61326-1:2013

LVD EN 61010-1:2010+A1:2019
EN IEC 61010-2-010:2020

RoHS EN IEC 63000:2018

(5) Signed for and on behalf of Oxford Nanopore Technologies plc.

Signature:

Date: 16 Dec, 2022

Full Name: Rajeev Uppal

Position: Director, Quality Assurance

Place of Issue: Oxford UK

Document: D-0710
Revision: 1

License and Warranty

The license and 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.

For more information, see the Device Warranty page on the Oxford Nanopore Store.

What's in the box

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

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 device weight is 14.4 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

- MinION/GridION Flow Cell (FLO-MIN114)
- MinION/GridION Flow Cell – RNA (FLO-MIN004RA)
- Flongle Flow Cell (FLO-FLG114)

Kits

- Ligation Sequencing Kit V14 (SQK-LSK114)
- Ligation Sequencing Kit XL V14 (SQK-LSK114-XL)
- Ultra-Long DNA Sequencing Kit V14 (SQK-ULK114)
- Multiplex Ligation Sequencing Kit XL V14 (SQK-MLK114.96-XL)

- Rapid Sequencing Kit V14 (SQK-RAD114)
- Rapid Barcoding Kit 24 V14 (SQK-RBK114.24)
- Rapid Barcoding Kit 96 V14 (SQK-RBK114.96)
- Rapid PCR Barcoding Kit 24 V14 (SQK-RPB114.24)
- Native Barcoding Kit 24 V14 (SQK-NBD114.24)
- Native Barcoding Kit 96 V14 (SQK-NBD114.96)
- 16S Barcoding Kit 24 V14 (SQK-16S114.24)
- cDNA-PCR Sequencing Kit V14 (SQK-PCS114)
- cDNA-PCR Barcoding Kit V14 (SQK-PCB114.24)
- Direct RNA Sequencing Kit (SQK-RNA004)

Software

Basecalling:

- MinKNOW
- Dorado

Basecalled reads are available as POD5 and FASTQ files.

Downstream analysis:

- EPI2ME
- Oxford Nanopore-developed tools and pipelines
- Customer-developed tools and pipelines

Change log

Date	Version	Changes made
24th April 2024	V9	- In "Technical specifications", made corrections to the computer spec - Made corrections to "Electrical information" - Added HDMI adapter to "What's in the box", and corrected the device weight - Updated the License and Warranty information - Updated the Declaration of Conformity
26th February 2024	V8	- Minor corrections and clarifications throughout the document - List of product cross-compatibilities has been updated
March 2023	V7	In "Technical specifications", the compute spec has been updated to Intel i7-10700K CPU.
January 2023	V6	Update to the EC Declaration of Conformity document
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