

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 to 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.

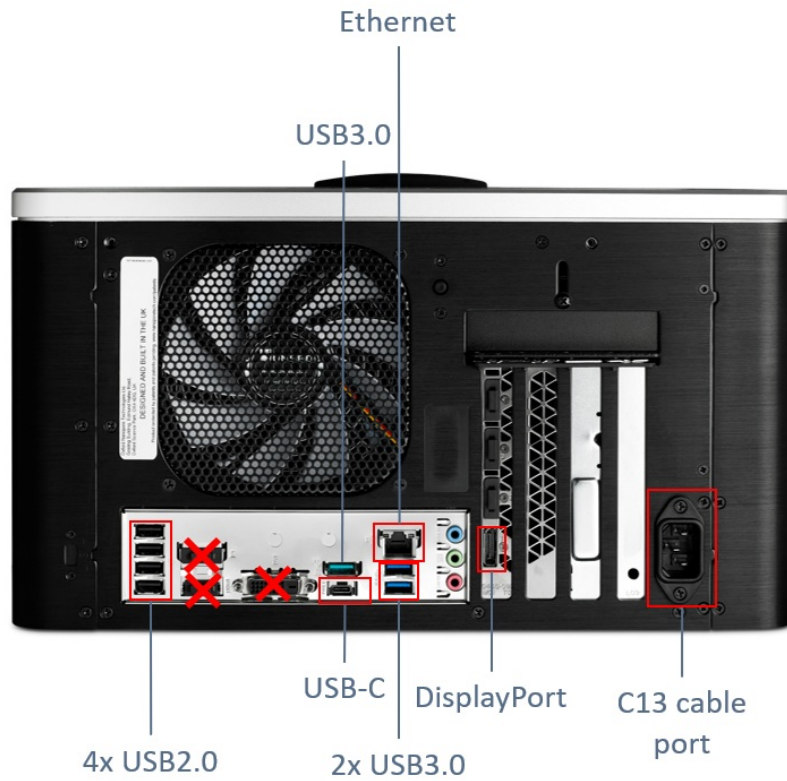
The GridION Mk1 provides users with five sequencing ports where MinION flow cells or Flongle adapters with flow cells can be connected, as well as a high performance integrated computer and basecalling accelerator. The device can basecall, in real-time, the data generated by five flow cells/Flongles. 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

Component	Specification
Size and weight	H 220 x W 365 x D 370 mm, 14.4 kg
Power	650 W
Compute spec	4 TB SSD Storage, 64 GB RAM, Intel i7-10700K CPU for OS and orchestration, basecalling accelerator
Pre-loaded software	Linux OS, GridION OS (<i>MinKNOW inside</i>), Guppy software
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	8 A maximum
Maximum power	650 W

Labels on the instrument

Label on the GridION Mk1:



Label on the SpotON Flow Cell:



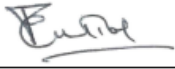


Emergency procedures

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-XSB003 / ONT-00-00272-00 GRD-XSB003-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	

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

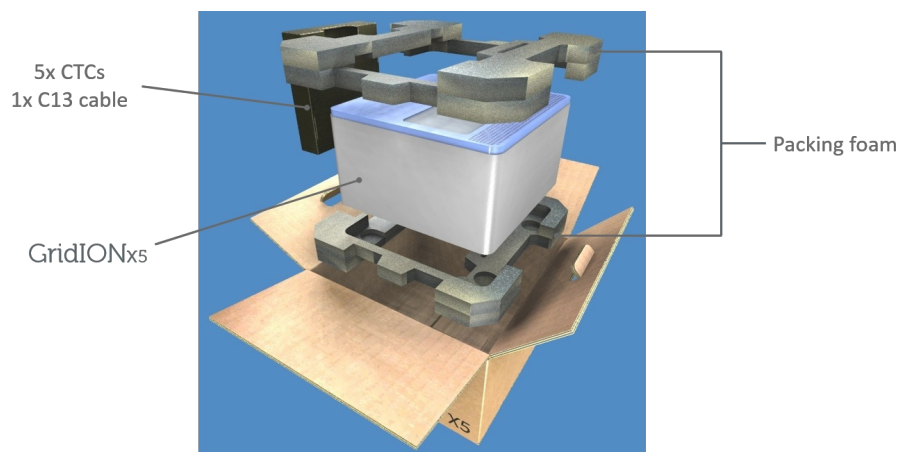
The GridION Mk1 is shipped together with a C13 cable specific to the country of delivery, and five configuration test cells (CTCs).



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

- Customer-developed tools and pipelines

Change log

Date	Version	Changes made
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