About this data: Mobile coverage

To create our Connected Nations Spring 2024 update, Ofcom collected and analysed data from the four mobile network operators. The data was collected as a snapshot in January 2024. The Methodology Annex provides details of our approach to collecting and analysing mobile coverage data.

Due to variations in mobile performance over time, the files should not be regarded as a definitive and fixed view of the UK's mobile infrastructure. However, the information provided in these files may be useful in identifying variations in mobile performance by geography.

If you have any questions or feedback on the data, please contact us at open.data@ofcom.org.uk.

We are providing this data on an open basis via the Open Government Licence, which gives users various freedoms about how they choose to use the data, subject to conditions.

The files are provided as Comma Separated Values files, with double quote (“) text delimiters where applicable.

Mobile coverage file for UK and Nations

This file contains a subset of the data points provided on the page “Mobile Coverage: Operator comparison” of the accompanying interactive report.

File name	Number of data rows	File size
202401_mobile_coverage_UK_and_Nations_r01.csv	735	52 KB

Column headers and what they represent

Field	Values	Description/Notes
Location	UK, England, Northern Ireland, Scotland, Wales	
Technology	4G, 5G high confidence, 5G very high confidence	
Coverage type	Premises (Outdoor), Premises (Indoor), Geographic	Premises (Indoor) only for 4G
Rurality	Total, Urban, Rural	
MNO	At least one, All, None, EE, O2, Three, Vodafone	The operator(s) providing coverage

Field	Values	Description/Notes
Coverage percentage		Percentage of premises or pixels covered
Coverage volume		Number of premises or pixels covered
Date		Date of latest snapshot (Mon-YY)

Other mobile coverage files

We provide two files with mobile coverage at the local and unitary authority level and two files at the parliamentary constituency level.

For the former, we have used the 2021 local authority boundaries and hence do not reflect the changes from 1 April 2023.[1] We will use the 2023 local authority list from our next update onwards.

Ref	File name	Level	Number of data rows	File size
1	202401_mobile_laua_r01.csv	Local and Unitary Authority	374	219 KB
2	202401_mobile_laua_with_5g_r01.csv	Local and Unitary Authority	374	170 KB
3	202401_mobile_pcon_r01.csv	Parliamentary Constituency	650	350 KB
4	202401_mobile_pcon_with_5G_r01.csv	Parliamentary Constituency	650	281 KB

Column headers and what they represent:

Field	In files	Description
laua	1,2	Local or Unitary Authority code, such as S12000033
laua_name	1,2	Local or Unitary Authority name
parl_const	3,4	Parliamentary Constituency code, such as E14000530

[1] https://blog.planningportal.co.uk/2023/03/24/local-authority-changes-from-1-april-2023/

Field	In files	Description
parl_const_name	3,4	Parliamentary Constituency name
prem_count	All	Number of premises in location
pixel_count	All	Number of 100m x 100m pixels in location
ab_rd_count	All	Number of 100m x 100m pixels in location containing A or B road features
mway_count	All	Number of 100m x 100m pixels in location containing motorway features
mway_ard_count	All	Number of 100m x 100m pixels in location containing motorway or A road features
[Service]_[Coverage type]_[Number of operators] (see below)	All	Percentage of premises or pixels in location for [Coverage type] with coverage for [Service] from [Number of operators]. For example: 4G_prem_in_2: the percentage of premises with indoor 4G coverage from 2 operators

The files mobile_laua and mobile_pcon have 144 columns providing percentage coverage for the following combinations of service, coverage type and number of operators:

Variable	Values	Description/Notes
Service	2G, 3G, 4G, Voice, Data	See below for the signal strength thresholds used when estimating coverage
Coverage type	prem_out	Premises outdoor
	prem_in	Premises indoor
	geo_out	Geographic
	abrd_in	A and B roads (in-car)
	mway_in	Motorways (in-car)
	mway_ard_in	Motorways and A roads (in-car)
Number of operators	0, 1, 2, 3, 4	Maximum three MNOs for 2G and four for all other services

The files mobile_laua_with_5g and mobile_pcon_with_5g have 102 columns providing percentage coverage for the following combinations of service, coverage type and number of operators:

Variable	Values	Description/Notes
Service	2G, 3G, 4G, Voice, Data, 5G_high_confidence, 5G_very_high_confidence	See below for the signal strength thresholds used when estimating coverage
Coverage type (Note 1)	prem_out	Premises outdoor
	prem_in	Premises indoor
	geo_out	Geographic
	abrd_in	A and B roads (in-car)
	mway_in	Motorways (in-car)
	mway_ard_in	Motorways and A roads (in-car)
Number of operators	None, At_least_one, All	All: three MNOs for 2G and four for all other services

Note 1: For 5G services, only outdoor coverage is provided (prem_out and geo_out)

Signal strength thresholds

We use the following signal strength thresholds when estimating coverage:

Service		Metric[2]	Outdoor	Indoor and in-car
2G		RxLev	-81dBm	-71dBm
3G		RSCP CPiCH	-100dBm	-90dBm
4G		RSRP	-105dBm	-95dBm
Voice	2G	RxLev	-81dBm	-71dBm
	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-105dBm	-95dBm
Data	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-115dBm	-105dBm

[2] **RxLev:** the Received Signal Level in 2G networks.
RSCP CPiCH: the Received Signal Code Power on the primary Common Pilot Channel for 3G networks.
RSRP: the Reference Signal Received Power in 4G networks.
SS-RSRP: the Synchronization Signal Reference Signal Received Power in 5G networks.

Service	Metric[2]	Outdoor	Indoor and in-car
5G high confidence	SS-RSRP	-110dBm	N/A
5G very high confidence	SS-RSRP	-100dBm	N/A