

# About this data: Mobile coverage, local and unitary authority area

To create our [Connected Nations 2023 report](#), Ofcom collected and analysed data from the four mobile network operators. This file contains mobile coverage information at local and unitary authority level. Note that we have used the 2021 local authority boundaries and hence do not reflect the changes from 1 April 2023.<sup>1</sup> We will use the 2023 local authority list from next year onwards.

The data was collected as a snapshot in September 2023. The [Methodology Annex](#) provides details of our approach to collecting and analysing coverage data.

Due to variations in mobile performance over time, the file should not be regarded as a definitive and fixed view of the UK's mobile infrastructure. However, the information provided in this file 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](mailto: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 a Comma Separated Values file, with double quote (") text delimiters where applicable.

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<sup>1</sup> <https://blog.planningportal.co.uk/2023/03/24/local-authority-changes-from-1-april-2023/>

## Coverage availability

File name: 202309\_mobile\_laua\_r01.csv

Total records in file: 1 header row, 374 data rows

File size: 219 KB

### Column headers and what they represent:

Field	Label	Note
<b>laua</b>	Lower tier authority	Local and Unitary Authority Code, such as E07000114
<b>laua_name</b>	Lower tier authority name	Local and Unitary Authority Name
<b>prem_count</b>	Number of premises in location	Based on the Connected Nations all premise base definition (Epoch 104)
<b>pixel_count</b>	Number of 100m x 100m pixels in location	
<b>ab_rd_count</b>	Number of 100m x 100m pixels in location containing A or B road features	
<b>mway_count</b>	Number of 100m x 100m pixels in location containing Motorway features	
<b>mway_ard_count</b>	Number of 100m x 100m pixels in location containing Motorway or A road features	
<b>2G_prem_out_0</b>	2G services, premises (outdoor): no reliable signal (%)	Threshold: -81dBm
<b>2G_prem_out_1</b>	2G services, premises (outdoor): signal from 1 operator (%)	Threshold: -81dBm
<b>2G_prem_out_2</b>	2G services, premises (outdoor): signal from 2 operators (%)	Threshold: -81dBm
<b>2G_prem_out_3</b>	2G services, premises (outdoor): signal from all operators (%)	Threshold: -81dBm
<b>2G_prem_in_0</b>	2G services, premises (indoor): no reliable signal (%)	Threshold: -71dBm

Field	Label	Note
2G_prem_in_1	2G services, premises (indoor): signal from 1 operator (%)	Threshold: -71dBm
2G_prem_in_2	2G services, premises (indoor): signal from 2 operators (%)	Threshold: -71dBm
2G_prem_in_3	2G services, premises (indoor): signal from all operators (%)	Threshold: -71dBm
2G_geo_out_0	2G services, geographic (outdoor): no reliable signal (%)	Threshold: -81dBm
2G_geo_out_1	2G services, geographic (outdoor): signal from 1 operator (%)	Threshold: -81dBm
2G_geo_out_2	2G services, geographic (outdoor): signal from 2 operators (%)	Threshold: -81dBm
2G_geo_out_3	2G services, geographic (outdoor): signal from all operators (%)	Threshold: -81dBm
2G_abrd_in_0	2G services, A and B roads: no reliable signal (%)	Threshold: -71dBm
2G_abrd_in_1	2G services, A and B roads: signal from 1 operator (%)	Threshold: -71dBm
2G_abrd_in_2	2G services, A and B roads: signal from 2 operators (%)	Threshold: -71dBm
2G_abrd_in_3	2G services, A and B roads: signal from all operators (%)	Threshold: -71dBm
2G_mway_in_0	2G services, motorways: no reliable signal (%)	Threshold: -71dBm
2G_mway_in_1	2G services, motorways: signal from 1 operator (%)	Threshold: -71dBm
2G_mway_in_2	2G services, motorways: signal from 2 operators (%)	Threshold: -71dBm
2G_mway_in_3	2G services, motorways: signal from all operators (%)	Threshold: -71dBm
2G_mway_ard_in_0	2G services, motorways and A-roads: no reliable signal (%)	Threshold: -71dBm
2G_mway_ard_in_1	2G services, motorways and A-roads: signal from 1 operator (%)	Threshold: -71dBm

Field	Label	Note
<b>2G_mway_ard_in_2</b>	2G services, motorways and A-roads: signal from 2 operators (%)	Threshold: -71dBm
<b>2G_mway_ard_in_3</b>	2G services, motorways and A-roads: signal from all operators (%)	Threshold: -71dBm
<b>3G_prem_out_0</b>	3G services, premises (outdoor): no reliable signal (%)	Threshold: -100dBm
<b>3G_prem_out_1</b>	3G services, premises (outdoor): signal from 1 operator (%)	Threshold: -100dBm
<b>3G_prem_out_2</b>	3G services, premises (outdoor): signal from 2 operators (%)	Threshold: -100dBm
<b>3G_prem_out_3</b>	3G services, premises (outdoor): signal from 3 operators (%)	Threshold: -100dBm
<b>3G_prem_out_4</b>	3G services, premises (outdoor): signal from all operators (%)	Threshold: -100dBm
<b>3G_prem_in_0</b>	3G services, premises (indoor): no reliable signal (%)	Threshold: -90dBm
<b>3G_prem_in_1</b>	3G services, premises (indoor): signal from 1 operator (%)	Threshold: -90dBm
<b>3G_prem_in_2</b>	3G services, premises (indoor): signal from 2 operators (%)	Threshold: -90dBm
<b>3G_prem_in_3</b>	3G services, premises (indoor): signal from 3 operators (%)	Threshold: -90dBm
<b>3G_prem_in_4</b>	3G services, premises (indoor): signal from all operators (%)	Threshold: -90dBm
<b>3G_geo_out_0</b>	3G services, geographic (outdoor): no reliable signal (%)	Threshold: -100dBm
<b>3G_geo_out_1</b>	3G services, geographic (outdoor): signal from 1 operator (%)	Threshold: -100dBm
<b>3G_geo_out_2</b>	3G services, geographic (outdoor): signal from 2 operators (%)	Threshold: -100dBm
<b>3G_geo_out_3</b>	3G services, geographic (outdoor): signal from 3 operators (%)	Threshold: -100dBm
<b>3G_geo_out_4</b>	3G services, geographic (outdoor): signal from all operators (%)	Threshold: -100dBm

Field	Label	Note
<b>3G_abrd_in_0</b>	3G services, A and B roads: no reliable signal (%)	Threshold: -90dBm
<b>3G_abrd_in_1</b>	3G services, A and B roads: signal from 1 operator (%)	Threshold: -90dBm
<b>3G_abrd_in_2</b>	3G services, A and B roads: signal from 2 operators (%)	Threshold: -90dBm
<b>3G_abrd_in_3</b>	3G services, A and B roads: signal from 3 operators (%)	Threshold: -90dBm
<b>3G_abrd_in_4</b>	3G services, A and B roads: signal from all operators (%)	Threshold: -90dBm
<b>3G_mway_in_0</b>	3G services, motorways: no reliable signal (%)	Threshold: -90dBm
<b>3G_mway_in_1</b>	3G services, motorways: signal from 1 operator (%)	Threshold: -90dBm
<b>3G_mway_in_2</b>	3G services, motorways: signal from 2 operators (%)	Threshold: -90dBm
<b>3G_mway_in_3</b>	3G services, motorways: signal from 3 operators (%)	Threshold: -90dBm
<b>3G_mway_in_4</b>	3G services, motorways: signal from all operators (%)	Threshold: -90dBm
<b>3G_mway_ard_in_0</b>	3G services, motorways and A-roads: no reliable signal (%)	Threshold: -90dBm
<b>3G_mway_ard_in_1</b>	3G services, motorways and A-roads: signal from 1 operator (%)	Threshold: -90dBm
<b>3G_mway_ard_in_2</b>	3G services, motorways and A-roads: signal from 2 operators (%)	Threshold: -90dBm
<b>3G_mway_ard_in_3</b>	3G services, motorways and A-roads: signal from 3 operators (%)	Threshold: -90dBm
<b>3G_mway_ard_in_4</b>	3G services, motorways and A-roads: signal from all operators (%)	Threshold: -90dBm
<b>4G_prem_out_0</b>	4G services, premises (outdoor): no reliable signal (%)	Threshold: -105dBm
<b>4G_prem_out_1</b>	4G services, premises (outdoor): signal from 1 operator (%)	Threshold: -105dBm

Field	Label	Note
4G_prem_out_2	4G services, premises (outdoor): signal from 2 operators (%)	Threshold: -105dBm
4G_prem_out_3	4G services, premises (outdoor): signal from 3 operators (%)	Threshold: -105dBm
4G_prem_out_4	4G services, premises (outdoor): signal from all operators (%)	Threshold: -105dBm
4G_prem_in_0	4G services, premises (indoor): no reliable signal (%)	Threshold: -95dBm
4G_prem_in_1	4G services, premises (indoor): signal from 1 operator (%)	Threshold: -95dBm
4G_prem_in_2	4G services, premises (indoor): signal from 2 operators (%)	Threshold: -95dBm
4G_prem_in_3	4G services, premises (indoor): signal from 3 operators (%)	Threshold: -95dBm
4G_prem_in_4	4G services, premises (indoor): signal from all operators (%)	Threshold: -95dBm
4G_geo_out_0	4G services, geographic (outdoor): no reliable signal (%)	Threshold: -105dBm
4G_geo_out_1	4G services, geographic (outdoor): signal from 1 operator (%)	Threshold: -105dBm
4G_geo_out_2	4G services, geographic (outdoor): signal from 2 operators (%)	Threshold: -105dBm
4G_geo_out_3	4G services, geographic (outdoor): signal from 3 operators (%)	Threshold: -105dBm
4G_geo_out_4	4G services, geographic (outdoor): signal from all operators (%)	Threshold: -105dBm
4G_abrd_in_0	4G services, A and B roads: no reliable signal (%)	Threshold: -95dBm
4G_abrd_in_1	4G services, A and B roads: signal from 1 operator (%)	Threshold: -95dBm
4G_abrd_in_2	4G services, A and B roads: signal from 2 operators (%)	Threshold: -95dBm
4G_abrd_in_3	4G services, A and B roads: signal from 3 operators (%)	Threshold: -95dBm

Field	Label	Note
<b>4G_abrd_in_4</b>	4G services, A and B roads: signal from all operators (%)	Threshold: -95dBm
<b>4G_mway_in_0</b>	4G services, motorways: no reliable signal (%)	Threshold: -95dBm
<b>4G_mway_in_1</b>	4G services, motorways: signal from 1 operator (%)	Threshold: -95dBm
<b>4G_mway_in_2</b>	4G services, motorways: signal from 2 operators (%)	Threshold: -95dBm
<b>4G_mway_in_3</b>	4G services, motorways: signal from 3 operators (%)	Threshold: -95dBm
<b>4G_mway_in_4</b>	4G services, motorways: signal from all operators (%)	Threshold: -95dBm
<b>4G_mway_ard_in_0</b>	4G services, motorways and A-roads: no reliable signal (%)	Threshold: -95dBm
<b>4G_mway_ard_in_1</b>	4G services, motorways and A-roads: signal from 1 operator (%)	Threshold: -95dBm
<b>4G_mway_ard_in_2</b>	4G services, motorways and A-roads: signal from 2 operators (%)	Threshold: -95dBm
<b>4G_mway_ard_in_3</b>	4G services, motorways and A-roads: signal from 3 operators (%)	Threshold: -95dBm
<b>4G_mway_ard_in_4</b>	4G services, motorways and A-roads: signal from all operators (%)	Threshold: -95dBm
<b>Voice_prem_out_0</b>	Voice services, premises (outdoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_out_1</b>	Voice services, premises (outdoor): signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_out_2</b>	Voice services, premises (outdoor): signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_out_3</b>	Voice services, premises (outdoor): signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_out_4</b>	Voice services, premises (outdoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_in_0</b>	Voice services, premises (indoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels

Field	Label	Note
<b>Voice_prem_in_1</b>	Voice services, premises (indoor): signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_in_2</b>	Voice services, premises (indoor): signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_in_3</b>	Voice services, premises (indoor): signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_prem_in_4</b>	Voice services, premises (indoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_geo_out_0</b>	Voice services, geographic (outdoor): no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_geo_out_1</b>	Voice services, geographic (outdoor): signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_geo_out_2</b>	Voice services, geographic (outdoor): signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_geo_out_3</b>	Voice services, geographic (outdoor): signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_geo_out_4</b>	Voice services, geographic (outdoor): signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_abrd_in_0</b>	Voice services, A and B roads: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_abrd_in_1</b>	Voice services, A and B roads: signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_abrd_in_2</b>	Voice services, A and B roads: signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_abrd_in_3</b>	Voice services, A and B roads: signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_abrd_in_4</b>	Voice services, A and B roads: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_in_0</b>	Voice services, motorways: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_in_1</b>	Voice services, motorways: signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_in_2</b>	Voice services, motorways: signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels

Field	Label	Note
<b>Voice_mway_in_3</b>	Voice services, motorways: signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_in_4</b>	Voice services, motorways: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_ard_in_0</b>	Voice services, motorways and A-roads: no reliable signal (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_ard_in_1</b>	Voice services, motorways and A-roads: signal from 1 operator (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_ard_in_2</b>	Voice services, motorways and A-roads: signal from 2 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_ard_in_3</b>	Voice services, motorways and A-roads: signal from 3 operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Voice_mway_ard_in_4</b>	Voice services, motorways and A-roads: signal from all operators (%)	See below for 2G, 3G, 4G threshold levels
<b>Data_prem_out_0</b>	Data services, premises (outdoor): no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_prem_out_1</b>	Data services, premises (outdoor): signal from 1 operator (%)	See below for 3G, 4G threshold levels
<b>Data_prem_out_2</b>	Data services, premises (outdoor): signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_prem_out_3</b>	Data services, premises (outdoor): signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_prem_out_4</b>	Data services, premises (outdoor): signal from all operators (%)	See below for 3G, 4G threshold levels
<b>Data_prem_in_0</b>	Data services, premises (indoor): no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_prem_in_1</b>	Data services, premises (indoor): signal from 1 operator (%)	See below for 3G, 4G threshold levels
<b>Data_prem_in_2</b>	Data services, premises (indoor): signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_prem_in_3</b>	Data services, premises (indoor): signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_prem_in_4</b>	Data services, premises (indoor): signal from all operators (%)	See below for 3G, 4G threshold levels

Field	Label	Note
<b>Data_geo_out_0</b>	Data services, geographic (outdoor): no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_geo_out_1</b>	Data services, geographic (outdoor): signal from 1 operator (%)	See below for 3G, 4G threshold levels
<b>Data_geo_out_2</b>	Data services, geographic (outdoor): signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_geo_out_3</b>	Data services, geographic (outdoor): signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_geo_out_4</b>	Data services, geographic (outdoor): signal from all operators (%)	See below for 3G, 4G threshold levels
<b>Data_abrd_in_0</b>	Data services, A and B roads: no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_abrd_in_1</b>	Data services, A and B roads: signal from 1 operator (%)	See below for 3G, 4G threshold levels
<b>Data_abrd_in_2</b>	Data services, A and B roads: signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_abrd_in_3</b>	Data services, A and B roads: signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_abrd_in_4</b>	Data services, A and B roads: signal from all operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_in_0</b>	Data services, motorways: no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_mway_in_1</b>	Data services, motorways: signal from 1 operator (%)	See below for 3G, 4G threshold levels
<b>Data_mway_in_2</b>	Data services, motorways: signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_in_3</b>	Data services, motorways: signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_in_4</b>	Data services, motorways: signal from all operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_ard_in_0</b>	Data services, motorways and A-roads: no reliable signal (%)	See below for 3G, 4G threshold levels
<b>Data_mway_ard_in_1</b>	Data services, motorways and A-roads: signal from 1 operator (%)	See below for 3G, 4G threshold levels

Field	Label	Note
<b>Data_mway_ard_in_2</b>	Data services, motorways and A-roads: signal from 2 operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_ard_in_3</b>	Data services, motorways and A-roads: signal from 3 operators (%)	See below for 3G, 4G threshold levels
<b>Data_mway_ard_in_4</b>	Data services, motorways and A-roads: signal from all operators (%)	See below for 3G, 4G threshold levels

## Signal thresholds

We use the following signal strength thresholds when estimating coverage:

Service		Metric <sup>2</sup>	Outdoor	Indoor and in-car
<b>2G</b>		RxLev	-81dBm	-71dBm
<b>3G</b>		RSCP CPiCH	-100dBm	-90dBm
<b>4G/enhanced data</b>		RSRP	-105dBm	-95dBm
<b>Voice</b>	2G	RxLev	-81dBm	-71dBm
	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-105dBm	-95dBm
<b>Basic data</b>	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-115dBm	-105dBm

<sup>2</sup> **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.