

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

To create our [Connected Nations Report](https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2020) (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2020) Ofcom collected and analysed data from all the mobile network operators. This file contains mobile network coverage information from the operators. Further information can be found in the [Connected Nations Methodology](https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2020/methodology) (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2020/methodology).

The coverage availability was collected as a snapshot in September 2020.

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](https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/) (https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/) 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.

### Revision Note

**Coverage availability**

File name: 202009\_mobile\_laua\_r01.csv

Total records in file: 1 header row, 379 data rows

File size on disk: 236 KB (241,664 bytes)

**Column headers and what they represent:**

| Field          | Label  | Note   |
|----------------|--|--|
| laua           | Lower tier authority   | Local and Unitary Authority Codes, such as E07000114       |
| laua_name      | Lower tier authority name  | Local and Unitary Authority Names                          |
| pixel_count    | Number of 100sq.m. pixels in location  |  |
| prem_count     | Number of premises in location   | Based on the Connected Nations all premise base definition |
| ab_rd_count    | Number of 100sq.m. pixels in location containing A or B road features        |  |
| mway_count     | Number of 100sq.m. pixels in location containing Motorway features           |  |
| mway_ard_count | Number of 100sq.m. pixels in location containing Motorway or A road features |  |
| 2G_prem_out_0  | 2G services, premises (outdoor): no reliable signal (%)                      | Threshold:-81dBm   |
| 2G_prem_out_1  | 2G services, premises (outdoor): signal from 1 operator (%)                  | Threshold:-81dBm   |
| 2G_prem_out_2  | 2G services, premises (outdoor): signal from 2 operators (%)                 | Threshold:-81dBm   |

Mobile coverage local and unitary authority area data

|               |  |                  |
|---------------|--|------------------|
| 2G_prem_out_3 | 2G services, premises (outdoor): signal from all operators (%)   | Threshold:-81dBm |
| 2G_prem_in_0  | 2G services, premises (indoor): no reliable signal (%)           | Threshold:-71dBm |
| 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, roads: no reliable signal (%)                       | Threshold:-71dBm |
| 2G_abrd_in_1  | 2G services, roads: signal from 1 operator (%)                   | Threshold:-71dBm |
| 2G_abrd_in_2  | 2G services, roads: signal from 2 operators (%)                  | Threshold:-71dBm |
| 2G_abrd_in_3  | 2G services, 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 |

Mobile coverage local and unitary authority area data

|                  |   |                   |
|------------------|---|-------------------|
| 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  |
| 2G_mway_ard_in_2 | 2G services, motorways and A-roads: signal from 2 operators (%)   | Threshold:-71dBm  |
| 2G_mway_ard_in_3 | 2G services, motorways and A-roads: signal from all operators (%) | Threshold:-71dBm  |
| 3G_prem_out_0    | 3G services, premises (outdoor): no reliable signal (%)           | Threshold:-100dBm |
| 3G_prem_out_1    | 3G services, premises (outdoor): signal from 1 operator (%)       | Threshold:-100dBm |
| 3G_prem_out_2    | 3G services, premises (outdoor): signal from 2 operators (%)      | Threshold:-100dBm |
| 3G_prem_out_3    | 3G services, premises (outdoor): signal from 3 operators (%)      | Threshold:-100dBm |
| 3G_prem_out_4    | 3G services, premises (outdoor): signal from all operators (%)    | Threshold:-100dBm |
| 3G_prem_in_0     | 3G services, premises (indoor): no reliable signal (%)            | Threshold:-90dBm  |
| 3G_prem_in_1     | 3G services, premises (indoor): signal from 1 operator (%)        | Threshold:-90dBm  |
| 3G_prem_in_2     | 3G services, premises (indoor): signal from 2 operators (%)       | Threshold:-90dBm  |
| 3G_prem_in_3     | 3G services, premises (indoor): signal from 3 operators (%)       | Threshold:-90dBm  |
| 3G_prem_in_4     | 3G services, premises (indoor): signal from all operators (%)     | Threshold:-90dBm  |
| 3G_geo_out_0     | 3G services, geographic (outdoor): no reliable signal (%)         | Threshold:-100dBm |

Mobile coverage local and unitary authority area data

|                  |   |                   |
|------------------|---|-------------------|
| 3G_geo_out_1     | 3G services, geographic (outdoor):<br>signal from 1 operator (%)    | Threshold:-100dBm |
| 3G_geo_out_2     | 3G services, geographic (outdoor):<br>signal from 2 operators (%)   | Threshold:-100dBm |
| 3G_geo_out_3     | 3G services, geographic (outdoor):<br>signal from 3 operators (%)   | Threshold:-100dBm |
| 3G_geo_out_4     | 3G services, geographic (outdoor):<br>signal from all operators (%) | Threshold:-100dBm |
| 3G_abrd_in_0     | 3G services, roads: no reliable signal<br>(%)                       | Threshold:-90dBm  |
| 3G_abrd_in_1     | 3G services, roads: signal from 1<br>operator (%)                   | Threshold:-90dBm  |
| 3G_abrd_in_2     | 3G services, roads: signal from 2<br>operators (%)                  | Threshold:-90dBm  |
| 3G_abrd_in_3     | 3G services, roads: signal from 3<br>operators (%)                  | Threshold:-90dBm  |
| 3G_abrd_in_4     | 3G services, roads: signal from all<br>operators (%)                | Threshold:-90dBm  |
| 3G_mway_in_0     | 3G services, motorways: no reliable<br>signal (%)                   | Threshold:-90dBm  |
| 3G_mway_in_1     | 3G services, motorways: signal from<br>1 operator (%)               | Threshold:-90dBm  |
| 3G_mway_in_2     | 3G services, motorways: signal from<br>2 operators (%)              | Threshold:-90dBm  |
| 3G_mway_in_3     | 3G services, motorways: signal from<br>3 operators (%)              | Threshold:-90dBm  |
| 3G_mway_in_4     | 3G services, motorways: signal from<br>all operators (%)            | Threshold:-90dBm  |
| 3G_mway_ard_in_0 | 3G services, motorways and A-roads:<br>no reliable signal (%)       | Threshold:-90dBm  |
| 3G_mway_ard_in_1 | 3G services, motorways and A-roads:<br>signal from 1 operator (%)   | Threshold:-90dBm  |

Mobile coverage local and unitary authority area data

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|------------------|--|-------------------|
| 3G_mway_ard_in_2 | 3G services, motorways and A-roads:<br>signal from 2 operators (%)   | Threshold:-90dBm  |
| 3G_mway_ard_in_3 | 3G services, motorways and A-roads:<br>signal from 3 operators (%)   | Threshold:-90dBm  |
| 3G_mway_ard_in_4 | 3G services, motorways and A-roads:<br>signal from all operators (%) | Threshold:-90dBm  |
| 4G_prem_out_0    | 4G services, premises (outdoor): no<br>reliable signal (%)           | Threshold:-105dBm |
| 4G_prem_out_1    | 4G services, premises (outdoor):<br>signal from 1 operator (%)       | Threshold:-105dBm |
| 4G_prem_out_2    | 4G services, premises (outdoor):<br>signal from 2 operators (%)      | Threshold:-105dBm |
| 4G_prem_out_3    | 4G services, premises (outdoor):<br>signal from 3 operators (%)      | Threshold:-105dBm |
| 4G_prem_out_4    | 4G services, premises (outdoor):<br>signal from all operators (%)    | Threshold:-105dBm |
| 4G_prem_in_0     | 4G services, geographic (indoor): no<br>reliable signal (%)          | Threshold:-95dBm  |
| 4G_prem_in_1     | 4G services, geographic (indoor):<br>signal from 1 operator (%)      | Threshold:-95dBm  |
| 4G_prem_in_2     | 4G services, geographic (indoor):<br>signal from 2 operators (%)     | Threshold:-95dBm  |
| 4G_prem_in_3     | 4G services, geographic (indoor):<br>signal from 3 operators (%)     | Threshold:-95dBm  |
| 4G_prem_in_4     | 4G services, geographic (indoor):<br>signal from all operators (%)   | Threshold:-95dBm  |
| 4G_geo_out_0     | 4G services, geographic (outdoor):<br>no reliable signal (%)         | Threshold:-105dBm |
| 4G_geo_out_1     | 4G services, geographic (outdoor):<br>signal from 1 operator (%)     | Threshold:-105dBm |
| 4G_geo_out_2     | 4G services, geographic (outdoor):<br>signal from 2 operators (%)    | Threshold:-105dBm |

Mobile coverage local and unitary authority area data

|                  |   |                   |
|------------------|---|-------------------|
| 4G_geo_out_3     | 4G services, geographic (outdoor):<br>signal from 3 operators (%)   | Threshold:-105dBm |
| 4G_geo_out_4     | 4G services, geographic (outdoor):<br>signal from all operators (%) | Threshold:-105dBm |
| 4G_abrd_in_0     | 4G services, roads: no reliable signal<br>(%)                       | Threshold:-95dBm  |
| 4G_abrd_in_1     | 4G services, roads: signal from 1<br>operator (%)                   | Threshold:-95dBm  |
| 4G_abrd_in_2     | 4G services, roads: signal from 2<br>operators (%)                  | Threshold:-95dBm  |
| 4G_abrd_in_3     | 4G services, roads: signal from 3<br>operators (%)                  | Threshold:-95dBm  |
| 4G_abrd_in_4     | 4G services, roads: signal from all<br>operators (%)                | Threshold:-95dBm  |
| 4G_mway_in_0     | 4G services, motorways: no reliable<br>signal (%)                   | Threshold:-95dBm  |
| 4G_mway_in_1     | 4G services, motorways: signal from<br>1 operator (%)               | Threshold:-95dBm  |
| 4G_mway_in_2     | 4G services, motorways: signal from<br>2 operators (%)              | Threshold:-95dBm  |
| 4G_mway_in_3     | 4G services, motorways: signal from<br>3 operators (%)              | Threshold:-95dBm  |
| 4G_mway_in_4     | 4G services, motorways: signal from<br>all operators (%)            | Threshold:-95dBm  |
| 4G_mway_ard_in_0 | 4G services, motorways and A-roads:<br>no reliable signal (%)       | Threshold:-95dBm  |
| 4G_mway_ard_in_1 | 4G services, motorways and A-roads:<br>signal from 1 operator (%)   | Threshold:-95dBm  |
| 4G_mway_ard_in_2 | 4G services, motorways and A-roads:<br>signal from 2 operators (%)  | Threshold:-95dBm  |
| 4G_mway_ard_in_3 | 4G services, motorways and A-roads:<br>signal from 3 operators (%)  | Threshold:-95dBm  |

Mobile coverage local and unitary authority area data

|                  |  |  |
|------------------|--|--|
| 4G_mway_ard_in_4 | 4G services, motorways and A-roads:<br>signal from all operators (%)   | Threshold:-95dBm                             |
| Voice_prem_out_0 | Voice services, premises (outdoor):<br>no reliable signal (%)          | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_out_1 | Voice services, premises (outdoor):<br>signal from 1 operator (%)      | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_out_2 | Voice services, premises (outdoor):<br>signal from 2 operators (%)     | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_out_3 | Voice services, premises (outdoor):<br>signal from 3 operators (%)     | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_out_4 | Voice services, premises (outdoor):<br>signal from all operators (%)   | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_in_0  | Voice services, geographic (indoor):<br>no reliable signal (%)         | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_in_1  | Voice services, geographic (indoor):<br>signal from 1 operator (%)     | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_in_2  | Voice services, geographic (indoor):<br>signal from 2 operators (%)    | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_in_3  | Voice services, geographic (indoor):<br>signal from 3 operators (%)    | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_prem_in_4  | Voice services, geographic (indoor):<br>signal from all operators (%)  | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_geo_out_0  | Voice services, geographic (outdoor):<br>no reliable signal (%)        | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_geo_out_1  | Voice services, geographic (outdoor):<br>signal from 1 operator (%)    | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_geo_out_2  | Voice services, geographic (outdoor):<br>signal from 2 operators (%)   | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_geo_out_3  | Voice services, geographic (outdoor):<br>signal from 3 operators (%)   | See below for 2G, 3G, 4G<br>threshold levels |
| Voice_geo_out_4  | Voice services, geographic (outdoor):<br>signal from all operators (%) | See below for 2G, 3G, 4G<br>threshold levels |



Mobile coverage local and unitary authority area data

|                     |  |   |
|---------------------|--|---|
| Voice_abrd_in_0     | Voice services, roads: no reliable signal (%)                        | See below for 2G, 3G, 4G threshold levels |
| Voice_abrd_in_1     | Voice services, roads: signal from 1 operator (%)                    | See below for 2G, 3G, 4G threshold levels |
| Voice_abrd_in_2     | Voice services, roads: signal from 2 operators (%)                   | See below for 2G, 3G, 4G threshold levels |
| Voice_abrd_in_3     | Voice services, roads: signal from 3 operators (%)                   | See below for 2G, 3G, 4G threshold levels |
| Voice_abrd_in_4     | Voice services, roads: signal from all operators (%)                 | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_in_0     | Voice services, motorways: no reliable signal (%)                    | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_in_1     | Voice services, motorways: signal from 1 operator (%)                | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_in_2     | Voice services, motorways: signal from 2 operators (%)               | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_in_3     | Voice services, motorways: signal from 3 operators (%)               | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_in_4     | Voice services, motorways: signal from all operators (%)             | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_ard_in_0 | Voice services, motorways and A-roads: no reliable signal (%)        | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_ard_in_1 | Voice services, motorways and A-roads: signal from 1 operator (%)    | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_ard_in_2 | Voice services, motorways and A-roads: signal from 2 operators (%)   | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_ard_in_3 | Voice services, motorways and A-roads: signal from 3 operators (%)   | See below for 2G, 3G, 4G threshold levels |
| Voice_mway_ard_in_4 | Voice services, motorways and A-roads: signal from all operators (%) | See below for 2G, 3G, 4G threshold levels |
| Data_prem_out_0     | Data services, premises (outdoor): no reliable signal (%)            | See below for 3G, 4G threshold levels     |

Mobile coverage local and unitary authority area data

|                 |   |  |
|-----------------|---|--|
| Data_prem_out_1 | Data services, premises (outdoor):<br>signal from 1 operator (%)      | See below for 3G, 4G<br>threshold levels |
| Data_prem_out_2 | Data services, premises (outdoor):<br>signal from 2 operators (%)     | See below for 3G, 4G<br>threshold levels |
| Data_prem_out_3 | Data services, premises (outdoor):<br>signal from 3 operators (%)     | See below for 3G, 4G<br>threshold levels |
| Data_prem_out_4 | Data services, premises (outdoor):<br>signal from all operators (%)   | See below for 3G, 4G<br>threshold levels |
| Data_prem_in_0  | Data services, geographic (indoor):<br>no reliable signal (%)         | See below for 3G, 4G<br>threshold levels |
| Data_prem_in_1  | Data services, geographic (indoor):<br>signal from 1 operator (%)     | See below for 3G, 4G<br>threshold levels |
| Data_prem_in_2  | Data services, geographic (indoor):<br>signal from 2 operators (%)    | See below for 3G, 4G<br>threshold levels |
| Data_prem_in_3  | Data services, geographic (indoor):<br>signal from 3 operators (%)    | See below for 3G, 4G<br>threshold levels |
| Data_prem_in_4  | Data services, geographic (indoor):<br>signal from all operators (%)  | See below for 3G, 4G<br>threshold levels |
| Data_geo_out_0  | Data services, geographic (outdoor):<br>no reliable signal (%)        | See below for 3G, 4G<br>threshold levels |
| Data_geo_out_1  | Data services, geographic (outdoor):<br>signal from 1 operator (%)    | See below for 3G, 4G<br>threshold levels |
| Data_geo_out_2  | Data services, geographic (outdoor):<br>signal from 2 operators (%)   | See below for 3G, 4G<br>threshold levels |
| Data_geo_out_3  | Data services, geographic (outdoor):<br>signal from 3 operators (%)   | See below for 3G, 4G<br>threshold levels |
| Data_geo_out_4  | Data services, geographic (outdoor):<br>signal from all operators (%) | See below for 3G, 4G<br>threshold levels |
| Data_abrd_in_0  | Data services, roads: no reliable<br>signal (%)                       | See below for 3G, 4G<br>threshold levels |
| Data_abrd_in_1  | Data services, roads: signal from 1<br>operator (%)                   | See below for 3G, 4G<br>threshold levels |

|                    |   |                                       |
|--------------------|---|---------------------------------------|
| Data_abrd_in_2     | Data services, roads: signal from 2 operators (%)                   | See below for 3G, 4G threshold levels |
| Data_abrd_in_3     | Data services, roads: signal from 3 operators (%)                   | See below for 3G, 4G threshold levels |
| Data_abrd_in_4     | Data services, roads: signal from all operators (%)                 | See below for 3G, 4G threshold levels |
| Data_mway_in_0     | Data services, motorways: no reliable signal (%)                    | See below for 3G, 4G threshold levels |
| Data_mway_in_1     | Data services, motorways: signal from 1 operator (%)                | See below for 3G, 4G threshold levels |
| Data_mway_in_2     | Data services, motorways: signal from 2 operators (%)               | See below for 3G, 4G threshold levels |
| Data_mway_in_3     | Data services, motorways: signal from 3 operators (%)               | See below for 3G, 4G threshold levels |
| Data_mway_in_4     | Voice services, motorways: signal from all operators (%)            | See below for 3G, 4G threshold levels |
| Data_mway_ard_in_0 | Data services, motorways and A-roads: no reliable signal (%)        | See below for 3G, 4G threshold levels |
| Data_mway_ard_in_1 | Data services, motorways and A-roads: signal from 1 operator (%)    | See below for 3G, 4G threshold levels |
| Data_mway_ard_in_2 | Data services, motorways and A-roads: signal from 2 operators (%)   | See below for 3G, 4G threshold levels |
| Data_mway_ard_in_3 | Data services, motorways and A-roads: signal from 3 operators (%)   | See below for 3G, 4G threshold levels |
| Data_mway_ard_in_4 | 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:

Mobile coverage local and unitary authority area data

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