



## 3G Coverage maps

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## Section 1

# Coverage maps

### Description

These 3G coverage maps by mobile operator were prepared in January 2009. They represent the area where we have assessed the mobile operators met a minimum coverage threshold set by Ofcom (see technical notes below). The shaded areas on the maps indicate areas where customers have the possibility of making and receiving a call outside over a 3G network (but with no guarantee of being able to do so). They do not indicate areas where customers are able to access higher data rate services.

All operators produce their own coverage indicators on their websites which are likely to provide more reliable guidance to network availability in any given area. The accuracy and detail of the maps are not to the same level as the mobile operators publish. These maps show UK-wide general coverage and are not suitable for zooming in to see specific locations i.e. a particular house or street. Also they are not suitable for assessing the quality or depth of coverage within the indicated areas (e.g. different operators may be able to offer better or worse data rate services or support a smaller or greater number of users).

### Introduction

It should be noted that the data used to generate the maps was not collected for the purpose of examining detailed mobile coverage therefore the availability or quality of mobile services cannot be assumed from these maps.

The coverage maps are based on theoretical predictions and were used as an intermediate step for Ofcom establishing the operators' compliance with their 3G licence rollout obligations. A summary of the assumptions used to generate the maps is provided in the technical notes below (for the full details see our consultation and statement on assessing compliance with the 3G rollout obligations: [http://www.ofcom.org.uk/consult/condocs/3g\\_rollout/](http://www.ofcom.org.uk/consult/condocs/3g_rollout/)). They only provide a snapshot of the extent of network coverage achieved by the operators at 31/12/2008 against the relevant coverage threshold.

The maps are provided without any representation or endorsement made and without warranty of any kind, whether express or implied, including but not limited to the implied warranties of satisfactory quality, fitness for a particular purpose, non-infringement, compatibility, security and accuracy.

## Section 2

# 3G coverage maps (January 2009)

## Technical notes

The 3G coverage maps have been calculated using the methodology consulted on (see: [http://www.ofcom.org.uk/consult/condocs/3g\\_rollout/](http://www.ofcom.org.uk/consult/condocs/3g_rollout/)). A summary of the key assumptions follows:

- Areas where the received signal strength of the primary CPICH (Common Pilot Channel) was calculated to exceed a threshold of -110dBm was used as a proxy for coverage;
- Outdoor (rather than indoor) coverage is calculated;
- Primary CPICH power equals 10% of the maximum transmit power;
- The propagation model used was ITU-R Rec. P.1546-2,
  - This is a model used internationally for coordination purposes (not one optimised for network planning). The mobile operators have spent many years calibrating their own proprietary propagation models; these are likely to be more accurate but were not available to us and indeed not needed for our purposes.
  - The indicated coverage represents areas where the threshold is exceeded for 50% of locations and 50% of time;
  - A comparison exercise with drive test data from sample regions was carried out resulting in an additional correction factor of + 8 dB.
  - All clutter class heights were set to a nominal 10 m default for our calculations. Clutter is the height of objects above the terrain i.e. trees or buildings.

It should be noted that the coverage maps are only valid for the above assumptions.

### H3G

**Ofcom Copyright**

Operator: H3G

Service: 3G

Date: 31/12/08

This map should not be used as a guarantee of coverage provision.

Please see the Technical Notes in this document for the assumptions used in calculating this coverage.



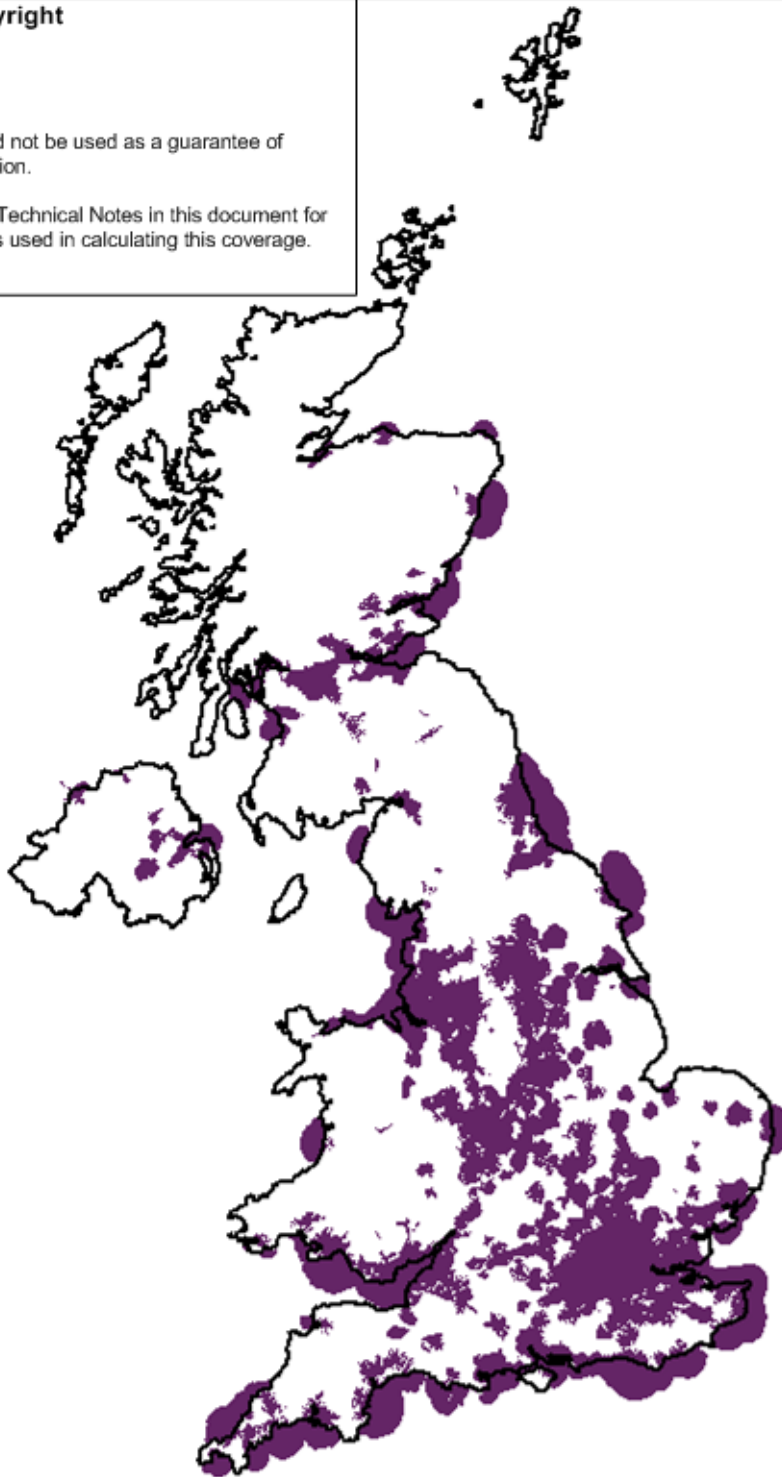
## O2

**Ofcom Copyright**

Operator: O2  
Service: 3G  
Date: 31/12/08

This map should not be used as a guarantee of coverage provision.

Please see the Technical Notes in this document for the assumptions used in calculating this coverage.



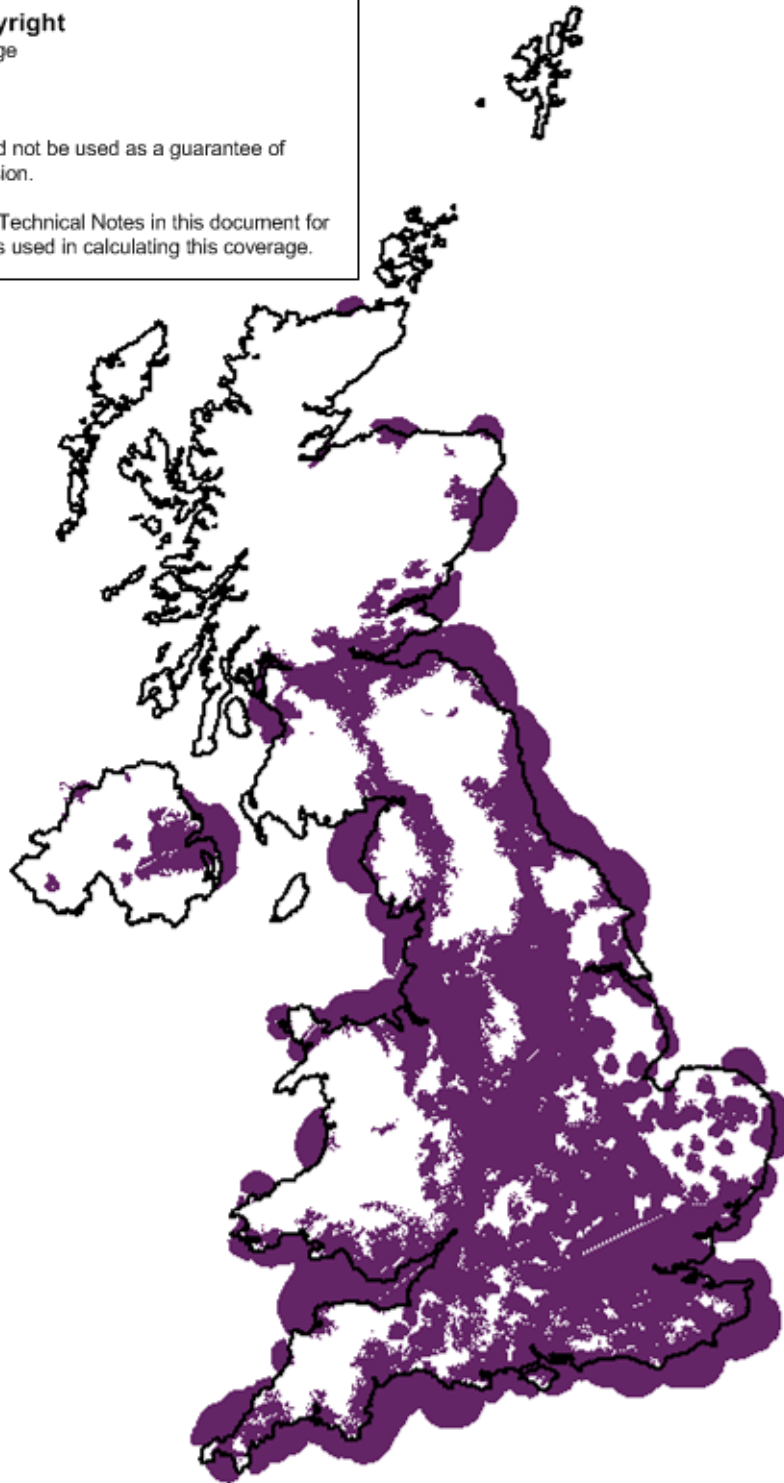
## Orange

**Ofcom Copyright**

Operator: Orange  
Service: 3G  
Date: 31/12/08

This map should not be used as a guarantee of coverage provision.

Please see the Technical Notes in this document for the assumptions used in calculating this coverage.





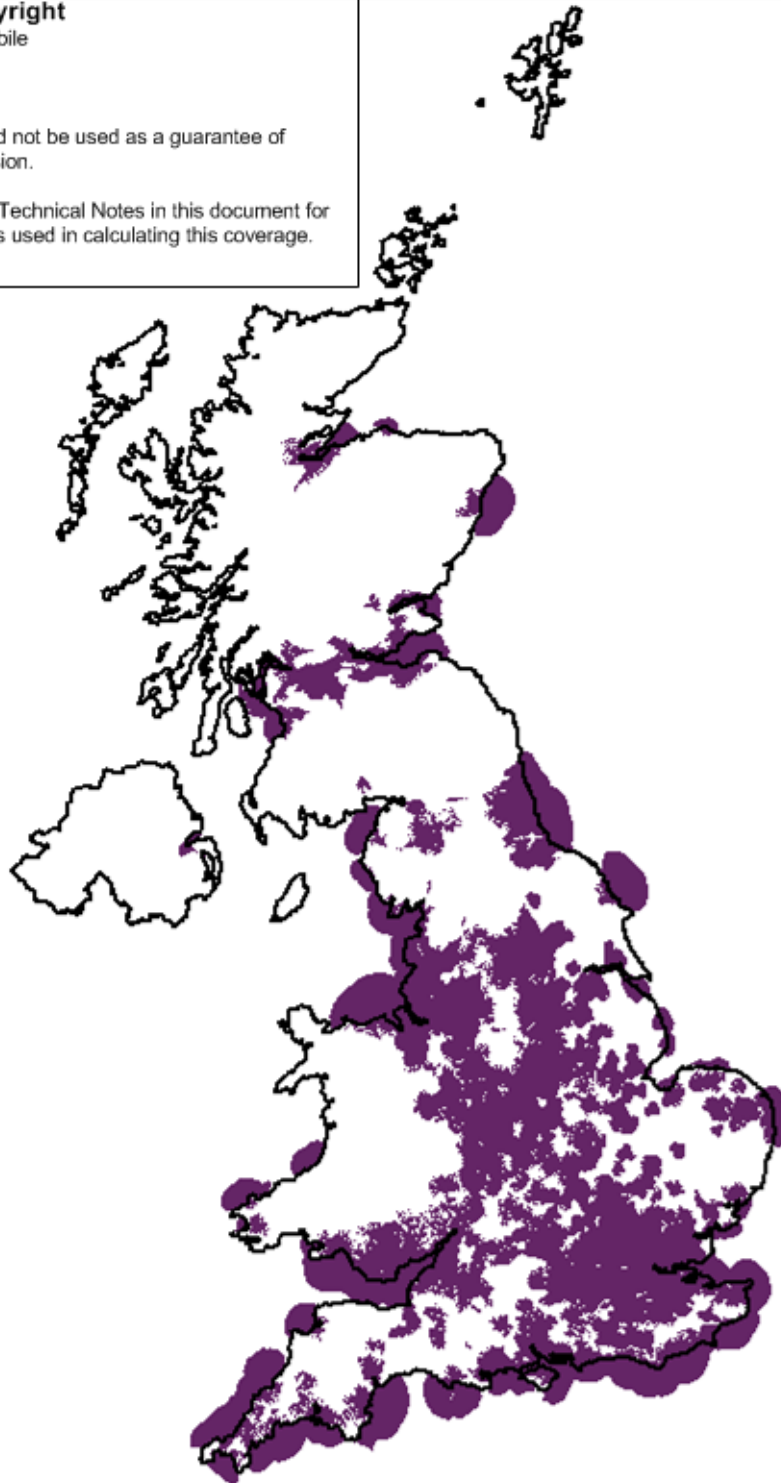
## T-Mobile

**Ofcom Copyright**

Operator: T-Mobile  
Service: 3G  
Date: 31/12/08

This map should not be used as a guarantee of coverage provision.

Please see the Technical Notes in this document for the assumptions used in calculating this coverage.



## Vodafone

**Ofcom Copyright**

Operator: Vodafone  
Service: 3G  
Date: 31/12/08

This map should not be used as a guarantee of coverage provision.

Please see the Technical Notes in this document for the assumptions used in calculating this coverage.

