
Cardiff small-scale DAB multiplex

Coverage and transmitter details (Block 10D)

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1. Overview

This document shows an estimate of the coverage provided by the Cardiff small-scale radio multiplex service, along with supporting technical information.

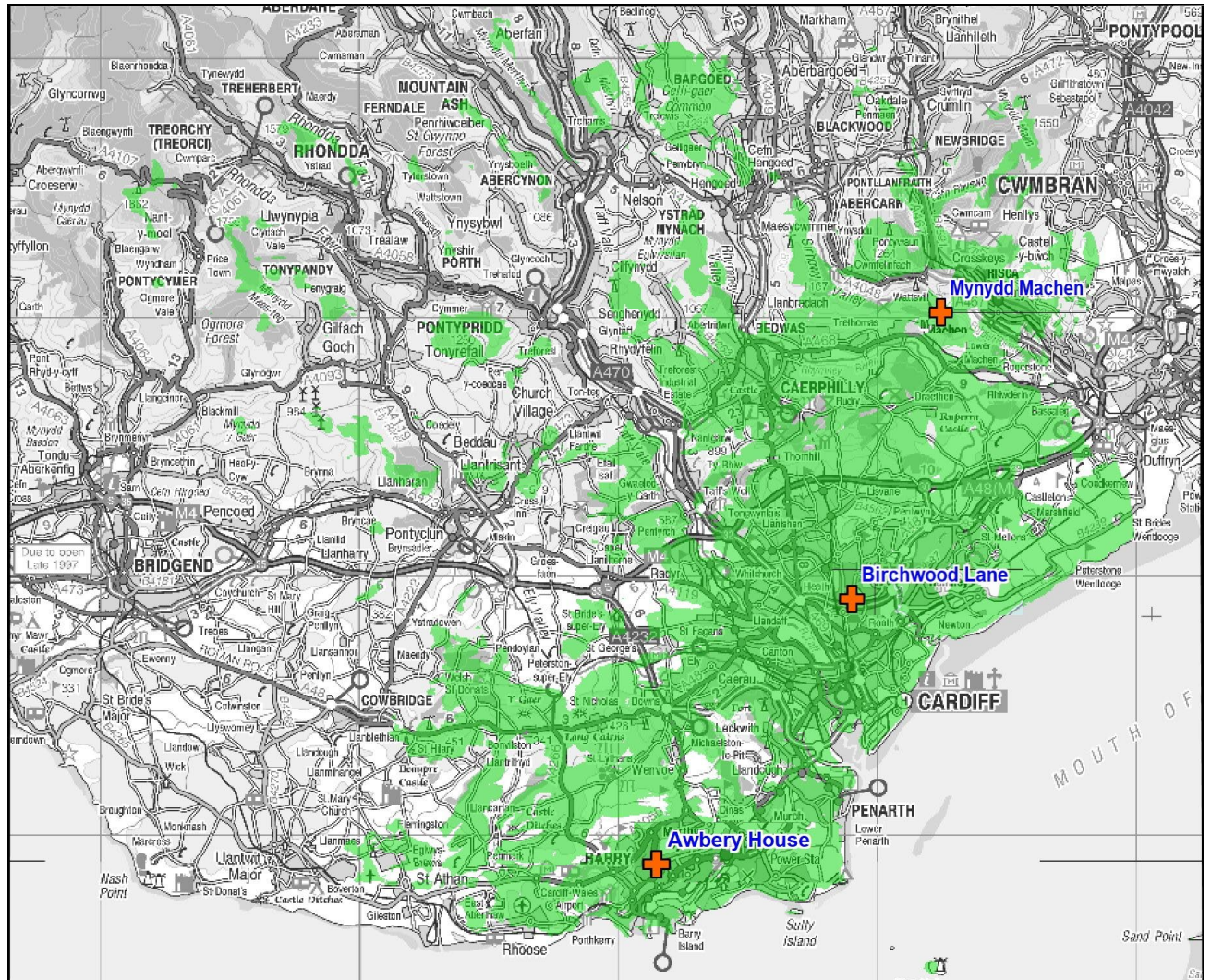
The map indicates where the small-scale radio multiplex service should be receivable on a DAB digital radio within a typical domestic building.

However, please note the following caveats:

- The map is based on computer predictions rather than actual measurements, so is indicative only.
- 'Receivable' is based on a defined signal level which may not be deemed adequate by all listeners.
- The map does not take account of any interference from other DAB digital radio services. The likelihood of any such interference will increase as more DAB services are launched, but Ofcom will seek to reduce the impact as far as is reasonably practicable.
- The map does not show where reception outside homes (e.g. along roads) may be possible.

2. Coverage map for the Cardiff small-scale DAB multiplex

Figure 1. Predicted indoor coverage of the Cardiff small-scale DAB multiplex, January 2023



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3. Cardiff small-scale DAB transmission details

Transmission parameters of the multiplex service

Table 1: General transmission parameters for the Cardiff small-scale DAB multiplex

Cardiff small-scale DAB parameters	
T-DAB block number	10D
Block centre frequency	215.072 MHz
Polarisation	Vertical Only
Adult population coverage	407,000

Transmitter characteristics

Table 2: Transmitter sites used for the Cardiff small-scale DAB multiplex

Site name	NGR	Site height (m)	Aerial height (m)	Power (watts)	Antenna D=directional ND = non-directional
Barry - Awbery House	ST 1099 6868	82	25	70	ND
Mynydd Machen	ST 2238 9008	360	40	25	D
Cardiff - University Hall	ST 1917 7910	56	30	70	D

A1: Derivation of coverage maps: technical background

All small-scale digital radio (DAB) services have a specified licence area which is defined by the coverage achieved by its transmitter network. This coverage is shown on the map. Any locations falling outside of this area are neither counted as part of the coverage nor does Ofcom seek to protect them from interference.

The coverage indicated does not represent or imply any warranty by Ofcom that the technical conditions which form the basis of its definition are satisfied at all points within the area shown, nor that these conditions would not be satisfied at locations outside of that area. The associated technical conditions represent a conservative average threshold (for the specified measure) for generally acceptable indoor reception for most circumstances: some listeners may find these thresholds too low to deliver what they would like, and others enjoy what they regard as adequate reception under worse conditions than those corresponding to these thresholds. Reception quality can differ rapidly with changing location, to a more detailed extent than is shown on the map.

A figure for the population served by the small-scale digital radio (DAB) service is given in Table 1 and a predicted coverage map in Figure 1. The licensed coverage is based on indoor coverage, i.e. for areas that are predicted to be served by a minimum field strength of 63dB μ V/m at 10m above ground level which corresponds to providing a service at 80% location probability and 50% time availability.

These maps do not take account of:

- hole-punching interference which may cause localised blocking around any DAB transmitter site not used by the wanted service; or
- interference from other services operating on the same frequency block.

The map represents power-summed coverage where the power received from individual transmitters is summed at each prediction point. A location is considered served if the calculated outdoor field strength at ten metres above ground level is at least 63 dB μ V/m. This equates to the coverage of 80% of locations indoors as defined in [Ofcom's technical policy guidance for DAB multiplex licensees](#). The prediction is calculated for normal propagation conditions.

Indoor coverage indicates where a radio with an indoor aerial within a typical domestic building should receive an adequate signal to operate satisfactorily. This measure takes account of the average expected losses as the signal passes through the walls of the building. Using a radio that carries the [Digital Radio Tick Mark](#) will help increase the likelihood that reliable reception will be possible. The Digital Radio Tick Mark is a certification mark established in 2013 for digital radios that requires the radio to be tested and approved, showing that it meets certain standards of performance and functionality.

Due to the short frequency re-use distance between small-scale DAB services, Ofcom only seeks to

protect indoor coverage. While outdoor reception (by vehicles and outdoor radios) may be possible in places outside the predicted indoor coverage area, this may change over time and be eroded as more small-scale and continental DAB services come into operation. As a general rule, Ofcom will only protect contiguous coverage and significant population centres beyond contiguous coverage. We will not seek to protect scattered rural and hilltop coverage outside the contiguous coverage area.