

Guidance on Geographic maps showing TVWS availability

On 4 September 2013 we published a [consultation](#) on the coexistence of white space devices (WSDs) operating in the UHF TV band (470-790 MHz) with other users of the spectrum. We also published a supporting [technical report](#) in which we provided details of our approach to ensuring a low probability of harmful interference from WSDs to existing services. Included in the report were some estimates of TV white spaces (TVWS) availability, both UK-wide and in two smaller geographic areas.

In addition to the estimates provided in the technical report, we have now provided geographic maps of TVWS availability set out in the sections below. They fall into three categories:

- 1. UK-wide TVWS availability in relation to coexistence with DTT**
- 2. London and Glasgow TVWS availability in relation to coexistence with DTT and PMSE**
- 3. Restrictions in maximum permitted WSD in-block EIRPs in relation to cross-border constraints**

Availability applies to outdoor geolocated WSDs only. If a WSD is not geolocated (e.g. a slave WSD which has not yet attached to a master) then the uncertainty in its location may mean lower TVWS availability.

1. UK-wide TVWS availability in relation to coexistence with DTT

In line with the proposals set out in our consultation, these maps include not only restrictions to ensure low probability of harmful interference to DTT, but also include exclusion of channel 38 and channel 60.

The maps indicate the number of DTT channels available for a WSD placed at the centre of every 100 m x 100 m pixel.

The analysis is based on Scenario 1: a WSD of spectrum emission class 1 with an antenna height of 15 m. Results are given for WSD EIRPs of 25 dBm/(8 MHz) and 35 dBm/(8 MHz).

For details of the calculations see [paragraphs 4.127 to 4.141](#) in TV white spaces: approach to coexistence technical report.

[\(1\)TVWS availability in relation to UK-wide DTT for Scenario 1 \(EIRP of 25 dBm\)](#)

[\(1\)TVWS availability in relation to UK-wide DTT for Scenario 1 \(EIRP of 35 dBm\)](#)

2. London and Glasgow TVWS availability in relation to coexistence with DTT and PMSE

In line with the proposals set out in our consultation, these maps include restrictions to ensure low probability of harmful interference to DTT and PMSE.

The maps indicate the number of DTT channels available for a WSD placed at the centre of every 100 m x 100 m pixel in a 10 km x 10 km area.

We present results for two scenarios: Scenario 1 (a WSD of spectrum emission spectrum class 1 with an antenna height of 15m) and Scenario 4 (WSD spectrum emission class 5 with an antenna height of 1.5m). In both cases results are given for WSD EIRPs of 25 dBm/(8 MHz) and 35 dBm/(8 MHz).

Note that this is a “snapshot” availability calculation associated with PMSE assignments that were live at any time on 25th May 2013.

For details of the calculations see [paragraphs 5.96 to 5.122](#) in TV white spaces: approach to coexistence technical report.

[\(2\)TVWS availability in relation to PMSE and DTT in London for Scenario 1 \(25 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in London for Scenario 1 \(35 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in London for Scenario 4 \(25 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in London for Scenario 4 \(35 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in Glasgow for Scenario 1 \(25 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in Glasgow for Scenario 1 \(35 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in Glasgow for Scenario 4 \(25 dBm\)](#)
[\(2\)TVWS availability in relation to PMSE and DTT in Glasgow for Scenario 4 \(35 dBm\)](#)

3. Restrictions in maximum permitted WSD in-block EIRPs in relation to cross-border constraints

In line with the proposals set out in our consultation, these maps show the EIRP restrictions required due to cross-border constraints for a WSD placed at the centre of every 1 km x 1 km pixel, coloured pixels indicating where EIRPs are restricted to values below 36 dBm/(8 MHz). The simulations assume a DTT DVB-T 8 MHz signal with an antenna height of 10 m.

Note these results do not account for any restrictions which might apply in relation to UK DTT, PMSE, or other services above and below the UHF TV band in the UK.

For details of the calculations see [paragraphs 8.5 to 8.31](#) in TV white spaces: approach to coexistence technical report.

[\(3\)White space device co-existence with international DTT services – Channel 21](#)

(3)White space device co-existence with international DTT services – Channel 40

(3)White space device co-existence with international DTT services – Channel 59