

**Response to Ofcom consultation:  
TV White Spaces: approach to coexistence  
dated 4 September, 2013**

Mandercom Consultants is concerned that there appears to be a major omission in Ofcom's approach to coexistence between Digital Terrestrial Television (DTT) and TV White Space (TVWS): households using amplifiers.

Across the UK, a very significant proportion of households use DTT receiving systems TV that contain amplifiers. It has been estimated that about 4m households use a masthead amplifier, and that 4-5m homes use an indoor amplifier<sup>1</sup>. In addition, about 5m homes receive their TV signals from a communal aerial system.

In an industry briefing on 14th October, 2013, DMSL stated that of the cases of interference confirmed as attributable to 4G/LTE base station emissions, 95% were in receiving installations with amplifiers. Although the sample size was small at that stage, this figure was reported to be in line with experience in other European countries. The implication is that in general, receivers with amplifiers perform considerably worse than receivers without amplifiers.

A recently published report<sup>2</sup> shows that DTT channels adjacent to an LTE interferer are affected most by intermodulation products generated in an amplifier. The report's authors believe that this result can be extended to TVWS systems, resulting in the need for reduced TVWS emission limits when operating on channels adjacent to DTT multiplexes.

**Conclusion**

Mandercom Consultants believes that TVWS/DTT coexistence criteria based exclusively on DTT receiver performance are seriously flawed. If the TVWS network is operated such that DTT receivers without amplifiers are exposed to levels of interference that are deemed acceptable, DTT receivers fed by amplifiers will be exposed to an unacceptable level of interference. The number of DTT receivers with amplifiers is much too large to ignore.

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- 1 Masthead and Indoor Amplifiers for TV Signal Reception and Distribution, P Barnett, June 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/dtt/annexes/Masthead-indoor-amplifier.pdf>
  - 2 Understanding DTT receive amplifier performance in the presence of LTE signals, ICT KTN, December 2013, <https://connect.innovateuk.org/documents/2849135/3712551/Understanding%20DTT%20receive%20amplifier%20performance%20in%20the%20presence%20of%20LTE%20signals%20Dec13>