



## PRESS RELEASE

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### **Tests indicate benefits to be gained from changing Digital Terrestrial Television transmission mode**

#### Extension of DTG trials

**Technical trials carried out by the digital TV industry have confirmed that digital terrestrial television (DTT) reception would be improved for millions of UK homes if the technical parameters currently being used are changed but which, in some cases, would reduce by up to a quarter the number of channels which can be made available.**

The tests, organised by the Digital TV Group (DTG), were carried out over the past three weeks from the Crystal Palace transmitter which serves the London area, using frequencies which have been unused since ITV Digital ceased broadcasting.

The work to date has been carried out by the two companies who operate transmitter sites, Crown Castle and NTL Broadcast, and BBC Research & Development, under the project management of the DTG, and with assistance from a number of receiver manufacturers. The work is being part-funded by the Department of Trade & Industry.

The Report sets out in detail the results that are found in practical situations, which are necessary to confirm theoretical predictions. It makes no specific recommendations, since the final choice of modes to be used is a commercial decision for broadcasters, the ITC and those currently applying for multiplex licences.

The initial technical report is available on the DTG website [www.dtg.org.uk](http://www.dtg.org.uk)<sup>1</sup>

The DTG's Technical Director, Peter Marshall, said, "The trials show the DTG at its best, with member companies co-operating and pooling results for the good of the industry"

"The results, which show that a change to 16QAM could give an instant improvement in reception equivalent to a tripling of transmission power, are destined to become a major reference for future DTT planning and have an important part to play in making DTT the natural replacement for analogue free-to-air viewing."

However, measurements in some modes of operation have shown a spread of results that requires further study. The DTG is also planning with further trials to investigate more fully modes which may prove particularly effective in improving reception on portable TVs and set-top aerials, such as many second and third sets in bedrooms and kitchens.

Digital Terrestrial Television is currently available to approximately 70 per cent of UK homes. There is widespread support within the digital TV industry, broadcasters, manufacturers and retailers (whom the DTG represents), for an urgent improvement both to the geographical coverage of the signal, and to its 'robustness' – or reliability – particularly to those households that rely on older and less efficient rooftop aerials.

More details are available from

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<sup>1</sup> see also a report prepared for the ITC from Logica called "Technical Options in Digital Terrestrial Television", available on their website <http://www.itc.org.uk>, and a report prepared by the Digital Action Plan Spectrum Planning Group called "DTT Coverage: Impact of existing installations & mode changes of reception Coverage", available from <http://www.digitaltelevision.gov.uk>.

## Notes for Editors

### About the Tests

Test transmissions began from Crystal Palace on 17th May, using channels 28, 29 and 34. Three variants of the DVB-T modulation parameters were broadcast, namely:

- 2k, 16 QAM, rate  $\frac{1}{2}$  - payload 18 Mb/s;
- 2k, 64 QAM, rate  $\frac{1}{2}$  - payload 18 Mb/s;
- 2k, 16 QAM, rate  $\frac{2}{3}$  - payload 16 Mb/s.

These compare with the parameters currently used, which are

- 2k, 64 QAM rate  $\frac{2}{3}$  - payload 24 Mb/s.

From 28th May, transmission modes were changed to facilitate further tests using the following additional variants:

- 2k 16 QAM rate  $\frac{1}{2}$  - payload 18 Mb/s
- 8k, 16 QAM, rate  $\frac{1}{2}$  - payload 18 Mb/s
- 8k, 64 QAM, rate  $\frac{2}{3}$  - payload 24 Mb/s

The DVB-T system is very flexible in allowing modulation parameters to be varied to optimise transmission for different situations. The tests explored modes of transmission that should, in theory, give significant improvements in reception. Measurements carried out during the trials, together with new unpublished laboratory tests by DTG members, were designed to quantify the actual improvements observed in practice, and confirm theoretical predictions.

Three methods of assessment were used

- Measurements in the field with survey vehicles to compare reception in the presence of traffic induced interference.
- To visit homes with known reception problems to analyse at first hand the improvements in reception given by the use of different modulation modes.
- To obtain a measure of the improvement obtained by different modes from questionnaires completed by households known to have current difficulties in reception.

The tests confirmed that all three 2k modes give tangible benefits in homes where reception problems have been experienced with the current transmissions, either because the existing aerial was old and less efficient, or because of 'impulsive' interference (usually caused by traffic or other domestic equipment like refrigerators), and in areas of marginal reception. Receivers currently in use will work with the all 2k modes so far tested.

Use of the 8k mode has also shown very considerable improvements in reception in some cases but with significant variations. The trials have been extended to get more results and to focus on the possibilities for reception on portable TVs with set-top aerials.

## About the DTG

**The DTG was formed in 1995 to set standards for the implementation of DVB-T in the UK and now encompasses all digital TV platforms and convergence issues on a world-wide basis.**

**Membership of the DTG is open to all companies involved in digital TV broadcasting on all platforms with a commitment to published standards and open markets.**

**We now have over 100 member companies which include broadcasters, manufacturers, retailers and others.**

The DTG...

- encourages an open market in receivers and set-top boxes.
- supports regulators' requirements for interoperability and open access.
- works in support of the Government's Digital Action Plan
- acts as a technical clearing house, publicising the work of members and providing a user-group to implementers around the world.
- has established a wholly-owned subsidiary, DTG Testing Ltd., to provide interoperability testing services to the industry.
- fulfils marketing and regulatory roles on behalf of its members and the industry.
- is actively working to enhance broadcasting with interactivity and internet technology.
- is an active member of the DVB Project.
- is a founder member of DigiTAG.
- exhibits at major international trade fairs.
- advises on DVB-T implementation world-wide.