



20 September 2006

O2 response to the Ofcom Consultation on High Power Limits for licence exempt devices

O2 (UK) Limited is pleased to be able to respond to the consultation on high power limits for licence exempt devices. Overall, we find that Ofcom has considered a wide range of issues associated with the idea of increasing power levels for certain licence exempt devices in certain geographical area. In this response, we discuss some of the key issues, relating to the need for limitations to radiated power levels, the problems associated with enforcement of geographical restrictions on licence exempt devices, and the need to maintain protection for existing licensees.

Requirement to limit radiated power

In our response to Ofcom's Consultation on the Spectrum Framework Review, O2 agreed that the amount of spectrum required for licence exempt applications will be limited due to the need to impose restrictions on the radiated power levels from exempt devices. Without such restrictions we noted that the use of equipment for transmission would be likely to involve harmful interference, and we stated our belief that Ofcom would not, therefore, be entitled to exempt the use of such equipment under UK and European law. With appropriate power restrictions in place O2 considers that the applications that make best use of licence exemption are short range communications, since any increase in power limits that would lead to increased range could also lead to a reduction in overall utility of the band due to increased interference. We agree with respondents to Ofcom's consultants [§2.8] who confirmed that this would indeed be the case for urban areas. Whilst it is true that, in rural areas, there are likely to be fewer users and therefore the probability of interference is lower, there nevertheless still needs to be certainty that the use of higher power licence exempt devices can be adequately restricted to these areas. This view was also confirmed by interviewees [§2.9].

Furthermore, we support Ofcom's suggestion to allow an increase in effective radiated power through the deployment of directional antennas, and therefore support the move towards conducted power limits. We note that Ofcom's consultants recommended that this change is implemented by restricting conducted power to 50mW for a nominal antenna gain of 3dB, and then to compensate for the elevation gain of directional antennas through a 1dB reduction in conducted power for every additional 2dB of antenna gain, up to a maximum antenna gain of 30dBi [Scientific Generics Final Report p8-9], whereas Ofcom has proposed a 1dB reduction in conducted power for every 3dB of antenna gain [§5.21]. We support the more cautious approach advocated by Ofcom's consultants, together with its recommendation that the basic conducted power limit in the 2.4GHz bands is set to 50mW.



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Enforcement of geographical restrictions

As Ofcom states [§5.1], a mechanism of licensing devices according to geographical area would be required if differential, location dependent power limits are to be introduced. Of the two alternative approaches to geographical restriction suggested in the Consultation, we agree with Ofcom [§5.8] that the first approach, that of a registration scheme, would be unenforceable. O2 considers that there is merit in exploring the second approach further, that of making the devices location-aware, but we nevertheless remain sceptical about the attractiveness of the resulting customised equipment. We note too that such additional costs would need to be taken into account in the impact assessment. Also, as the proliferation of licence exempt devices increases, we agree that there may be a need to review the initial geographical limits that define the rural areas, to prevent an excessive increase in interference potential, and that the resulting potential requirement for updating the database of allowed areas [§6.11] may impose additional costs on equipment.

Overall, we consider that the second option proposed by Ofcom [§6.10-6.12], that of minimising the risks by allowing the higher effective powers achievable through the use of directional antennas to be used only by location aware devices, and defining the initial acceptable area as rural, to be the best option for that part of the 2.4GHz band not owned by the MoD.

Rights of existing licensees

In our response to Ofcom's Consultation on the Spectrum Framework Review, O2 agreed that, whatever the spectrum management method employed, one of the roles of the national spectrum regulator will always remain the resolution of interference issues. In our response to Ofcom's Consultation on spectrum liberalisation, O2 noted our expectation that, in moving towards a more technology and usage neutral approach to spectrum management, Ofcom will need to increase its ability to protect licensed assignments. An increase in the power limits associated with licence exempt devices is also likely, in our view, to lead to a requirement for increased enforcement activity. Whilst this may not be the case within licence exempt spectrum bands, since radio equipment operates on a "no protection" basis, where spectrum is shared with licensed users a cautious approach should be taken. We therefore agree with Ofcom's summary [§3.57] that there should be no increase in power limits in the 5GHz Bands A and B, and that any increase in power limits in 5GHz Band C should be limited to 4W EIRP.

We trust that you will take these concerns into account when publishing your response Statement(s). If you would like to discuss any of these issues further with me or any of my colleagues, please do not hesitate to contact me.

Yours sincerely,

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