Licence Exemption of Wireless Telegraphy Devices

Proposed changes

Question 1): Do you agree with Ofcom's proposal to give an 18-month notice period for the closure of the 10.68 to 10.7 GHz band to new SRD deployments?

As a successful and technically advanced UK based manufacturer and supplier of electronic security equipment and systems, we have designed and supplied many millions of dual technology intruder alarm detectors into the European market over the past 20 years. These detectors use a combination of Passive Infra-red and microwave Doppler technologies to ensure a high level of immunity to false alarms in domestic, commercial and industrial installations, whilst providing the level of sensitivity required to reliably detect genuine intrusions. More than 50% of our production has been supplied into the UK market and for these products the microwave part operates in the 10.675 GHz to 10.699 GHz band as designated in IR2030 – UK Interface Requirements.

A typical commercial or industrial security equipment installation consists of at least 5 dual technology detectors, some of which can be installed in close proximity to each other (for example on opposite sides of a partition wall projecting into adjacent offices) where experience has shown the benefit in operating adjacent detectors at different frequencies within the allowed band, as part of a strategy to avoid interference between adjacent detectors. This is a common strategy for other suppliers.

We offer detectors in the UK operating at the following frequencies, to allow sufficient spacing between the individual detectors, whilst providing an adequate guard band at the band edges:-

10.675 GHz – lower band edge
10.680 GHz – lower frequency
10.687 GHz – centre frequency
10.695 GHz – upper frequency
10.699 GHz – upper band edge

Although the transmission frequency of all the microwave detectors we produce is stabilised with the use of a dielectric resonator, the frequency of individual detectors varies with temperature and installation (as would be expected) and experience shows that a spacing of 7 – 8 MHz is required between adjacent detectors to avoid the potential for mutual interference in all circumstances.

The UK is the only country in the EU (and we believe globally) that specifies this frequency range, so the product we manufacture for the UK is unique and different from the product we manufacture for use in other parts of the EU or the world. This has adverse implications both in terms of manufacturing cost and the cost of obtaining and maintaining EN approval of the products.

Until c.2005 this band was the only one available in the UK in the 10 GHz region for indoor applications. The 10.577 GHz – 10.597 GHz band is now available for indoor as well as

outdoor applications, however the available bandwidth of 20 MHz does not allow sufficient spacing between physically adjacent detectors, or prevents the allocation of adequate guard bands at the band edges.

Whilst we acknowledge the reasons cited by OFCOM for closing the 10.675 GHz – 10.699 GHz band our concerns lie with the inadequacies of the alternative band(s) that are currently available and would wish to make the following points:-

1) Our preference would be for allocation of the 10.500 GHz – 10.550 GHz band for this application, in common with the many other EU countries, including Holland, Belgium, Spain and Italy – the major installers of this type of equipment. Such a change would simplify our product offering, allowing us to be more competitive in Europe and to offer lower costs to UK consumers.
2) Whilst the available 10.577 GHz – 10.597 GHz band falls within the ERC 70-03 recommendation Annex 6 (d), the available bandwidth is insufficient to meet our requirements as explained above.
3) The 10.577 GHz – 10.597 GHz band has not been widely explored for use by security equipment (by us or other suppliers) because of the potential for interference from outdoor traffic light detectors that have historically used this band employing high gain, narrow beam antennas. Since many of these systems are portable, they can be deployed at short notice, posing the potential for intermittent interference problems and potentially could be used as an intentional “jammer”.
4) As a minimum we would request an increase in bandwidth of the 10.577 GHz – 10.597 GHz allocation to at least 25 MHz to mirror the current arrangements, although further additional bandwidth in line with other EU countries would minimise the potential interference from traffic light systems.
5) All major EU countries offer a minimum bandwidth of 40 MHz in the 10 GHz region for this application, with many offering considerably more. Available frequency bands above or below this range suffer from a number of problems that currently preclude their widespread use for security applications (see below).
6) The 2.4 GHz ISM band is no longer suitable for security equipment, because of the proliferation of Wi-Fi and Bluetooth equipment (amongst others) in this band. Moving to this band would not be secure
7) The 24 GHz ISM band provides inadequate performance at an increased cost and although this situation is likely to change in the next decade, for the near future 10GHz will remain the band of choice for an acceptable combination of cost & performance.

In summary we have no issue with the principle or timescale for closing the 10.675 GHz – 10.699 GHz band, but need additional spectrum in the 10 GHz region, preferably harmonised with other major EU countries, to maintain our performance and competitiveness.