

Interference between Short Range Devices and Amateur Repeaters

Ofcom has recently received reports of instances of interference from Short Range Devices to Amateur Repeaters in the 70 cm band (between 430 and 440 MHz).

This band is used by Radio Amateur licensees on a secondary basis and Amateur stations such as Repeaters/Gateways/Beacons are licensed via a Notice of Variation (NoV) to the appropriate Amateur Licence, subject to authorisation from the primary user of the band.

Short Range devices operate under the Wireless Telegraphy (Exemption) Regulations 2003 as amended (also referred to as the "Exemption Regulations") and in accordance with the [Interface Requirement IR 2030](#) published in September 2008.

Table 3.1 of the IR gives the relevant parameters and conditions of permitted use of SRDs. One of the conditions provided for in the Exemption Regulations is that the relevant apparatus shall not cause or contribute to any undue interference to any wireless telegraphy.

The SRDs and the Amateur service in this band operate essentially on a secondary basis to the primary user and normally both secondary parties operate harmoniously. It is recognised however that this may not always occur and where there is interference to Radio Amateurs, some mitigation steps discussed and suggested by the RSGB, that the Amateurs may wish to consider are the following:

CTCSS: the use of continuous tone controlled (squelch) signalling systems (CTCSS) on both transmit and receive legs of Amateur repeaters can provide some protection against SRD signals. Obviously the interference is still present but CTCSS on the repeater receiver prevents it "opening" and thus relaying the interfering signal. CTCSS on the repeater output allows mobile stations to protect their receivers from direct SRD reception. If the interfering signal is strong it will of course still present a problem to those legitimate amateur signals which are lower in signal strength.

Receiver bandwidth: UHF repeaters in the Amateur Service normally use 25 kHz channel spacing. It has been found in some circumstances that the use of narrower filters in the base station receivers can reduce interference from slightly "off channel" interfering sources. Although assisting in reducing annoying noises, these narrower filters can cause clipping to wanted signals which can have peak deviations up to 5 kHz.

Channel selection: The highest levels of interference are generally encountered in urban locations. It has been reported that some SRDs use a default setting of 434.65 MHz. Where known and/or feasible Ofcom will attempt to negotiate with the primary user of the band, initial frequency assignments that may be less likely to be affected by SRDs. It should be noted however that Ofcom is not always able to negotiate clearances with the primary user as there are difficulties in many areas and some frequencies are reserved for special cases.

Liaison with SRD users: In some instances (e.g. shared site use), where the users of SRDs are known, they have been co-operative in moving frequency where feasible, when the shared use of the band has been highlighted to them.

Information is also available at the RSGB Emerging Technology Co-ordination Committee website: <http://www.ukrepeater.net/documents.html>