

Spectrum Forum Meeting – Saturday 10th July 2004

Spectrum Report – Microwaves

As has become the norm, the situation on the amateur microwave bands remains fluid and the subject of considerable concern in the long term.

Almost without exception, the amateur services are under threat in all the bands from 1.3GHz to 76GHz, due to Primary User commercial or military pressures everywhere in the microwave spectrum. In almost all bands there continue to be sub-band restrictions, geographical restrictions or restrictions on unattended operation, a most unsatisfactory position for both the Amateur Services. There appears to be little or no chance of narrow Amateur Primary (Exclusive) allocations even though these have been sought for many years within IARU R1.

1.3GHz band

In the 1.3GHz band, there is the possibility that the contentious European Gallileo GPS system (30x50W satellites) will use frequencies in the amateur band, although this is by no means certain. Objections by Primary users continue to delay decisions on beacons and ATV repeaters, although there are some signs of progress.

2.3GHz band

At 2.3GHz, at the moment, the scenario is quiet: there appear to be few problems between satellite operation and WLAN activities at 2400MHz, although if the power limit on SRDs is raised (likely), then there may be considerable problems for the Amateur Satellite Service.

3.4GHz band

Similarly, the 3.4GHz band is quiet, although its use for WLL is far from dead.

5.7GHz band

Roll-out of WLL in the 5.7GHz band has started, and the use of, particularly, 5760MHz may well necessitate a move from this Amateur international frequency to the “reserve” frequencies (around 5668MHz) which have been suggested for some years in IARU R1.

10GHz band

There have been considerable delays in some beacon licensing in the 10GHz band and the question of compatibility between amateur operation around 10368MHz and Primary users has yet to be resolved, even though compatibility trials were arranged some years ago, but were not followed up

due to perceived cost/insurance constraints. This band, however, (together with 1.3GHz) remains one of the most used of the microwave bands, even though large segments of the band have been lost over the past 10 to 20 years.

24GHz band and above

The changeover from “conventional” calling frequencies in the mm bands (ie 24GHz up) to those agreed at San Marino appears to have gone off without too many objections or problems, both in the UK and IARU R1.

It is unfortunate that very weak signal international operation (Satellite and EME) in the 24GHz band (which, incidentally, is the first of the amateur microwave allocations to have an Amateur Primary segment) is threatened by the almost certain EU introduction of automobile anti-collision SRR (short range radar) – up to eight devices per vehicle, using Ultra-Wideband technology.

Despite strong technical objections by the Amateur services and the Radio Astronomy service, it appears that a “temporary compromise” – lasting to at least 2014 has been agreed by the CEPT and an EU consortium of car manufacturers. It has been estimated that in many situations the noise-floor of a state-of-the-art amateur stations will be raised by an amount which may make very weak signal communication almost impossible.

Thereafter, the 76GHz band will be phased in for SRR, as 24GHz is phased out (not expected before 2020) presenting further problems to the amateur services in that band!

Clashes of interest in many of the bands above 24GHz are not seen as serious at this time, since the “re-use” distance of the mm bands should allow effective sharing without too many interference problems, although this may change with the rapidly evolving technology.

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07/04