

RECOMMENDATION ITU-R F.747*

Radio-frequency channel arrangements for fixed wireless systems operating in the 10 GHz band

(Question 136/9)

(1992)

The ITU Radiocommunication Assembly,

considering

- a) that the 10.5 to 10.68 GHz frequency band is allocated to the fixed and mobile services;
- b) that this band is advantageous for various digital fixed wireless system applications;
- c) that such systems are already in extensive use and are expected to be used more extensively in the future;
- d) that differing applications for various administrations may require different frequency plans;
- e) that several services with various transmission signal characteristics and capacities may be in simultaneous use in this frequency band;
- f) that the specific band allocated to each service or even to each administration may vary from one country to another;
- g) that the applications in this frequency band may require differing channel bandwidths;
- h) that a high degree of compatibility between radio-frequency channels of different arrangements can be achieved by selecting all channel centre frequencies from a homogeneous basic pattern;
- j) that the differing digital hierarchies used in various countries or regions may require the use of homogeneous basic patterns with differing intervals,

recommends

- 1 that frequency plans for the 10.5 to 10.68 GHz band should be based on homogeneous patterns;
- 2 that the homogeneous pattern with a preferred 3.5 MHz interval be defined by the relation:

$$f_n = f_r - 1200.5 + 3.5 n \quad \text{MHz}$$

where the reference frequency of the homogeneous pattern is:

$$f_r = 11\,701 \text{ MHz}$$

and the number of radio-frequency channels is:

$$1 \leq n \leq 50$$

(see Annex 1);

* Radiocommunication Study Group 9 made editorial amendments to this Recommendation in 2002 in accordance with Resolution ITU-R 44.

3 that the homogeneous pattern with a preferred 1.25 MHz interval be defined by the relation:

$$f_n = f_r - 1151 + 1.25 n \quad \text{MHz}$$

where the reference frequency of the homogeneous pattern is:

$$f_r = 11701 \quad \text{MHz}$$

and the number of radio-frequency channels is:

$$1 \leq n \leq 103$$

(see Annex 2);

4 that the channel spacings, the centre gap, and the distance to the lower and upper band limits, the reference frequency, as well as any further subdivision or combination of radio-frequency channels should be agreed by the administrations concerned, dependent on the application and channel capacity envisaged.

Annex 1

Description of a radio-frequency channel arrangement using the homogeneous pattern described in *recommends 2*

The channel arrangement is as follows:

- lower half of the band: $f_n = f_r - 1204 + 7 m$ MHz
- upper half of the band: $f'_n = f_r - 1113 + 7 m$ MHz

The 12 values of m from 1 to 12 will provide the twelve channel frequencies of each half-band.

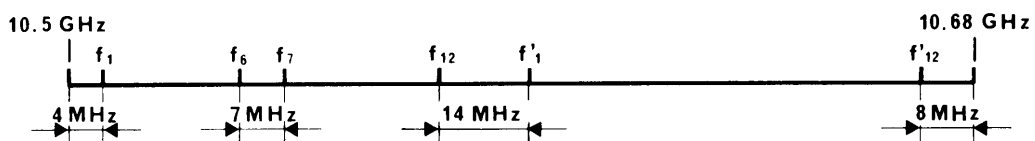
The reference frequency f_r is:

$$f_r = 11701 \quad \text{MHz}$$

This arrangement is illustrated in Fig. 1.

FIGURE 1

Radio-frequency channel arrangement in the frequency band 10.5 to 10.68 GHz



Annex 2

Description of a radio-frequency channel arrangement using the homogeneous pattern described in *recommends 3*

The channel arrangement assigns separate frequency band portions to point-to-point and to point-to-multipoint transmission, respectively, as shown in Fig. 2. Two different channel bandwidths are available for each of the two services: 1.25 and 2.5 MHz for the point-to-point service, 2.5 and 5.0 MHz for the digital electronic message service (DEMS). Each assigned radio-frequency channel may be subdivided as desired for greater usage versatility and higher spectral efficiency.

FIGURE 2

Radio-frequency channel arrangement for the 10.55 to 10.68 GHz band
(All frequencies are in MHz)

