Recommendation T/R 12-01 E (Helsinki 1991, revised Rottach-Egern, February 2010)

PREFERRED CHANNEL ARRANGEMENTS FOR FIXED SERVICE SYSTEMS OPERATING IN THE FREQUENCY BAND 37.0 - 39.5 GHz

Recommendation adopted by the Working Group "Spectrum Engineering" (SE)

"The European Conference of Postal and Telecommunications Administrations,

considering

a) that CEPT has a long-term objective to harmonise the use of frequencies throughout Europe in order to make the most effective use of the spectrum available;

b) that within the European Common Allocation and the ITU Radio Regulations (RR), the band 37.0 - 37.5 GHz is allocated, on primary basis, to the fixed service and the band 37.5 - 39.5 GHz is allocated, on equal primary basis, to the mobile, fixed and fixed-satellite services (space-to-Earth); moreover, the band 37.0-38.5 GHz is also allocated on equal primary basis to the space research service;

c) that ERC/DEC/(00)02 designates the band 37.5 - 39.5 GHz for the use of point-to-point fixed links and uncoordinated FSS earth stations shall not claim protection from FS stations;

d) that recommendations ITU-R F.1669 and ITU-R SF.1573 defines the protection criteria and the maximum power flux density (PFD) for the protection of FS systems from the FSS space stations;

e) that Recommendation ITU-R F.749 contains radio-frequency arrangements for systems of fixed service operating in the 38 GHz band.

recommends

1. that CEPT administrations should consider the radio frequency channel arrangements in the band 37.0 - 39.5 GHz given in Annex A;

2. that in order to improve spectrum utilisation, administrations may wish to consider using parts of the centre gap and guard bands as given in Annex A."

Note:
Please check the ECO web site (http//:www.ero.dk) for the up to date position on the implementation of this and other ECC and ERC Recommendations.

Annex A

Radio-frequency channel arrangements in the band 37.0 - 39.5 GHz

The radio frequency channel arrangement for carrier spacings of 112 MHz, 56 MHz, 28 MHz, 14 MHz, 7 MHz and 3.5 MHz shall be derived as follows:

Let f_r be the reference frequency of 38 248 MHz;
     f_n be the centre frequency (MHz) of a radio-frequency channel in the lower half of the band;
     f'_n be the centre frequency (MHz) of a radio-frequency channel in the upper half of the band;

then the frequencies of individual channels are expressed by the following relationships:

a)   For systems with a carrier spacing of 112 MHz:
     Lower half of band: $f_n = (f_r - 1246 + 112n)$ MHz
     Upper half of band: $f'_n = (f_r + 14 + 112n)$ MHz   where: n = 1, 2, 3, …. 10

b)   For systems with a carrier spacing of 56 MHz:
     Lower half of band: $f_n = (f_r - 1218 + 56n)$ MHz
     Upper half of band: $f'_n = (f_r + 42 + 56n)$ MHz   where: n = 1, 2, 3, …. 20

c)   For systems with a carrier spacing of 28 MHz:
     Lower half of band: $f_n = (f_r - 1204 + 28n)$ MHz
     Upper half of band: $f'_n = (f_r + 56 + 28n)$ MHz   where: n = 1, 2, 3, …. 40

     In addition, according to Recommends 2, where practical, Administrations may consider the use of channels with index n = 0 and 41

d)   For systems with a carrier spacing of 14 MHz:
     Lower half of band: $f_n = (f_r - 1197 + 14n)$ MHz
     Upper half of band: $f'_n = (f_r + 63 + 14n)$ MHz   where: n = 1, 2, 3, …. 80

     In addition, according to Recommends 2, where practical, Administrations may consider the use of channels with index n = -2,-1, 0 and 81 and 82, 83

e)   For systems with a carrier spacing of 7 MHz:
     Lower half of band: $f_n = (f_r - 1193.5 + 7n)$ MHz
     Upper half of band: $f'_n = (f_r + 66.5 + 7n)$ MHz   where: n = 1, 2, 3, …. 160

     In addition, according to Recommends 2, where practical, Administrations may consider the use of channels with index n = -5, -4,-3, -2, -1, 0, and 161, 162, 163, 164, 165, 166

f)   For systems with a carrier spacing of 3.5 MHz:
     Lower half of band: $f_n = (f_r - 1191.75 + 3.5n)$ MHz
     Upper half of band: $f'_n = (f_r + 68.25 + 3.5n)$ MHz   where: n = 1, 2, 3, …. 320

     In addition, according to Recommends 2, where practical, Administrations may consider the use of channels with index n = -11, -10, to 0 and 321 to 332

A fully homogeneous band plan, based on a 3.5 MHz raster, with channel edges aligned as shown in Figure 1.

Figure 1: Occupied spectrum 37.0 - 39.5 GHz band
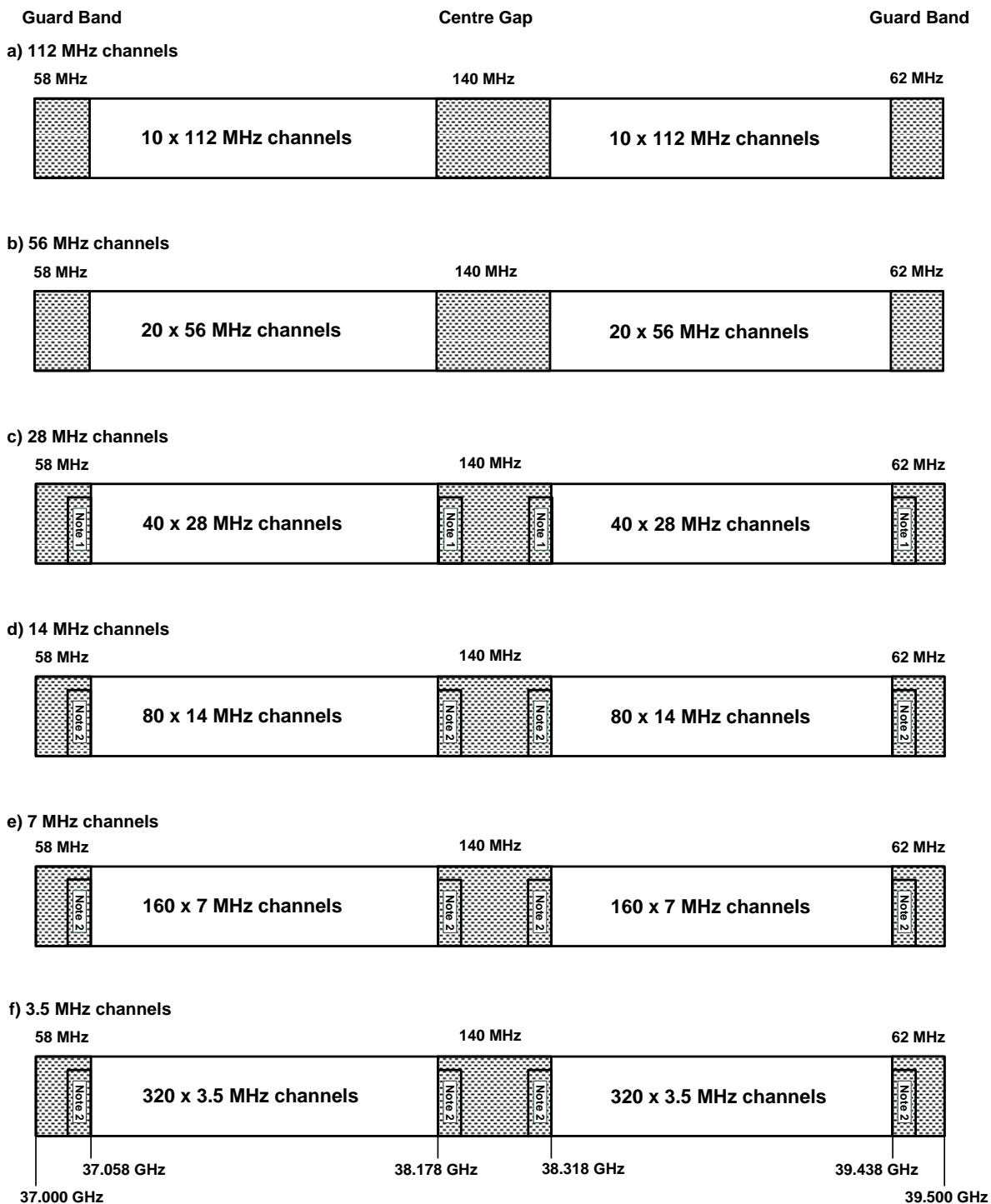
Note 1: One additional 28 MHz channel according recommends 2
Note 2: 42 MHz for additional 3.5, 7 and 14 MHz channels according recommends 2