

**CEPT/ERC/RECOMMENDATION 13-04 E (Tallin 1998)****PREFERRED FREQUENCY BANDS FOR FIXED WIRELESS ACCESS  
IN THE FREQUENCY RANGE BETWEEN 3 AND 29.5 GHz**

Recommendation proposed by the Working Group "Frequency Management" (WGFM)

*Text of the Recommendation adopted by the "European Radiocommunications Committee" (ERC):*

**INTRODUCTION**

**Fixed Wireless Access (FWA)** is encompassed by the definition of Wireless Access (WA), also known as Wireless Local Loop (WLL), recently developed by ITU-R. WA is 3 fold: FWA, Mobile Wireless Access (MWA) and Nomadic Wireless Access (NWA). The latter two variants are not considered in this Recommendation. The ITU defines Wireless Access as "end user radio connection(s) to core networks".

This recommendation covers only FWA in frequency bands between 3 and 29.5 GHz. Multimedia Wireless Systems (MWS) above 29.5 GHz are catered for in separate ERC Decisions and Recommendations. The MWS band at 40.5 –43.5 GHz is so designated. This Recommendation should be complemented, as necessary, by other Recommendations or Decisions covering the other aspects of MWS.

This Recommendation has been prepared in the light of guidance from CEPT that it is urgently needed by CEPT administrations. However, due to the rapid evolution of the telecommunication environment, a review of this Recommendation will be necessary within the next 2 years.

FWA can be provided by using the technologies based on infrastructure of cordless, cellular, point-to-point, point to-multipoint, and multipoint-to-multipoint systems. In most cases FWA systems in the frequency range 3-29.5 GHz can be provided by using either point-to-multipoint or multipoint-to-multipoint technology operating in frequency bands allocated to the fixed service. However, in some cases, point-to-point FWA technology can be used to connect subscribers. FWA technology can provide data rates from 9.6kbit/sec up to several Mbit/sec.

This Recommendation identifies preferred frequency bands for FWA in order to encourage Administrations to progress towards a harmonised situation.

Currently it is recognised that, in some cases, due to the use of the proposed preferred bands by other applications, it is not possible to accommodate the spectrum requirements for FWA in a well-defined set of harmonised bands in CEPT countries. For this reason a flexible approach with the identification of different frequency bands has been adopted in this Recommendation, allowing room to adapt to specific national situations and needs and giving firm guidelines to administrations, operators and manufacturers.

FWA technologies may be used for telecommunications services (telephone, video telephones, interactive TV, data transmission, etc.) as well as for MWS (interactive TV, fast Internet, etc.). At present Administrations will provide regulations in each country to identify the appropriate bands for such services. The process of convergence will help to achieve harmonised/optimised solutions.

"The European Conference of Postal and Telecommunications Administrations,

*considering*

- a) that in Europe requirements were identified for the provision of harmonised frequency spectrum for FWA systems, especially in frequency bands above 3 GHz;
- b) that in Europe a band has been designated around 40 GHz as the home for broadband, ~~broadcast-quality~~, multimedia wireless services;
- c) that the use of harmonised frequency bands would ease frequency co-ordination between adjacent countries and with other radio services, that these requirements may vary considerably from country to country;
- d) that at present a single common harmonised frequency band is not available and may not be appropriate;
- e) that the identification of a number of frequency bands allocated to the fixed service is necessary to provide for the flexible accommodation of the spectrum requirements of individual CEPT-countries;
- f) that in some CEPT-countries, one or the other band or parts of a particular band may not be available for FWA applications;
- g) that for the time being full harmonisation of FWA frequency bands can not be accomplished;
- h) that a choice of a limited number of preferred frequency bands should satisfy initial market demands and help to reduce the cost of equipment;
- i) that there are a number of different multipoint<sup>1</sup> access technologies that may be used, for which different channelling and/or frequency allocation schemes may be appropriate,

*noting*

- a) that equipment standards for point-to-multipoint fixed service systems have been and continue to be developed by ETSI covering inter alia the frequency ranges 3 - 11 GHz and 24.5 - 29.5 GHz;
- b) that harmonised channel arrangements for point-to-multipoint fixed service systems that could be used for FWA applications have already been developed within CEPT for the frequency bands 3.4 - 3.6 GHz (CEPT/ERC/REC 14-03), 3.6-3.8 GHz (CEPT/ERC/REC 12-08, Annex B, part 2) and 10.15 - 10.30 GHz, 10.50 - 10.65 GHz (CEPT/ERC/REC 12-05);
- c) that the provision of the frequency bands 3.4 - 3.6 GHz, 3.6 - 3.8 GHz (within countries where high/medium capacity channel plan uses only the frequency band 3.8 – 4.2 GHz – see ECA Table and CEPT/ERC/REC 12-08) and 10.15 - 10.30 GHz/10.50 - 10.65 GHz would facilitate the deployment of point-to-multipoint fixed service systems serving typical areas with low and medium subscriber densities;
- d) that within the harmonised channel arrangements for point-to-point FS systems for the ranges 24.5 - 26.5 and 27.5 - 29.5 GHz (ERC Recommendation T/R 13-02), point-to-multipoint fixed service systems providing FWA access can also be accommodated;
- e) that the provision of spectrum within the bands 24.5 - 26.5 and 27.5 - 29.5 GHz would facilitate the deployment of FWA systems serving typical areas with high subscriber density,

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<sup>1</sup> In this Recommendation, "multipoint" refers to both point-to-multipoint and multipoint-to-multipoint technologies.

- f) that within the band 24.5 - 26.5 GHz multipoint, as well as point-to-point, systems could be implemented in adjacent band segments according to the individual country's allocation / segmentation plan;
- g) that in parts of the band 27.5 - 29.5 GHz multipoint, as well as point-to-point, systems could be implemented taking into account sharing requirements with other services;
- h) that in some countries not all the bands mentioned above may be available for the accommodation of FWA applications;
- i) that Article S5 of the Radio Regulations allocates the band 10.6 - 10.68 GHz to the Fixed, Earth Exploration Satellite (passive), Radio Astronomy, and Space Research services;
- j) that in some countries co-ordination is required between the Fixed and Radioastronomy services in the 10.6 - 10.68 GHz band (see ERC Report 36);
- k) that other channelisation/allocation plans might need to be developed to enable alternative multipoint access technologies,

*recommends*

- 1) that the frequency bands 3.400 - 3.600 GHz, 10.15 - 10.30 GHz/10.50 - 10.65 GHz, be identified as preferred bands for FWA applications within CEPT;
- 2) that parts of the frequency band 24.5 - 26.5 GHz be identified as preferred bands for FWA applications within CEPT, where not required by Administrations for conventional point-to-point fixed links, taking into account the sharing requirements of point-to-point fixed links in neighbouring Administrations;
- 3) that parts of the band 27.5 - 29.5 GHz be identified as preferred bands for FWA applications, taking into account sharing requirements with other services. CEPT has still to take a final decision on the sharing conditions within this band. In the meantime, CEPT Administrations should not take any final decisions on its utilisation.