

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R F.2006
(03/2012)

**Radio-frequency channel and block
arrangements for fixed wireless systems
operating in the 71-76 and 81-86 GHz bands**

F Series
Fixed service



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Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

Policy on Intellectual Property Right (IPR)

ITU-R policy on IPR is described in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC referenced in Annex 1 of Resolution ITU-R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <http://www.itu.int/ITU-R/go/patents/en> where the Guidelines for Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the ITU-R patent information database can also be found.

Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

Series	Title
BO	Satellite delivery
BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
F	Fixed service
M	Mobile, radiodetermination, amateur and related satellite services
P	Radiowave propagation
RA	Radio astronomy
RS	Remote sensing systems
S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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RECOMMENDATION ITU-R F.2006

Radio-frequency channel and block arrangements for fixed wireless systems operating in the 71-76 and 81-86 GHz bands

(2012)

Scope

This Recommendation provides radio-frequency channel and block arrangements for fixed wireless systems (FWS) operating in the 71-76/81-86 GHz range, which may be used for broadband applications and other high-speed networks. The preferred arrangements are based on common homogeneous pattern with elementary slots of 125 MHz. The preferred radio-frequency block arrangements are based on 5 GHz sub-band or block possibly subdivided to form smaller blocks. The preferred channel arrangement provides flexible identification of channel sizes from 250 MHz to 4 500 MHz and duplex frequency either of 2.5 GHz (single sub-band, 71-76 GHz or 81-86 GHz, arrangement) or 10 GHz (joint sub-bands, 71-76 GHz and 81-86 GHz together, arrangements).

The ITU Radiocommunication Assembly,

considering

- a) that there is a particular need for fixed wireless systems (FWS) for large data capacity transport, e.g. for uncompressed high-definition television (HDTV) signal transmission or for mobile networks applications, the deployment of which is expected to rapidly grow;
- b) that the frequency bands 71-76 GHz and 81-86 GHz are allocated to the fixed service;
- c) that the propagation characteristics in these bands are ideally suited for use of short-range high capacity digital radio links in high-density networks;
- d) that in these frequency bands high directivity antennas are achievable even with small size antennas, increasing the density of equipment and further reducing risk of interference with same and other services;
- e) that several services with various transmission signal characteristics and capacities may be in simultaneous use in this frequency band;
- f) that the applications in this frequency band may require different channel bandwidths;
- g) that, in some cases, a flexible sub-band or block arrangement, can accommodate various FWS technologies, whilst remaining consistent with good spectrum management principles, including provision for inter-systems/services operation and overall spectrum efficiency;
- h) that, when link-by-link frequency coordination is applied, the definition of radio-frequency channel arrangements is preferable;
- j) that careful frequency planning permits accommodation of frequency division duplex (FDD) and time division duplex (TDD) applications;
- k) that different applications licensed by various administrations may require different radio-frequency channel arrangements;
- l) that, in some countries, only limited portions of the two bands may be available for civil applications;
- m) that some countries may wish to or already have made these bands available through a flexible simplified approach without any specific channel plan,