



Recommendation ITU-R F.383-10
(02/2021)

**Radio-frequency channel arrangements for
high-capacity fixed wireless systems
operating in the lower 6 GHz
(5 925 to 6 425 MHz) band**

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.

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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.383-10

Radio-frequency channel arrangements for high-capacity fixed wireless systems operating in the lower 6 GHz (5 925 to 6 425 MHz) band

(Question ITU-R 247-1/5)

(1959-1963-1966-1982-1986-1990-1992-1999-2001-2007-2013-2021)

Scope

This Recommendation provides radio frequency (RF) channel arrangements for high-capacity fixed wireless systems (FWSs) operating in the 5 925 to 6 425 MHz band, which may also be used for low- and medium-capacity systems through high-capacity channel subdivision. The main text of as well as Annexes 1 to 3 to this Recommendation present a number of RF arrangements with channel separation of 5, 10, 20, 28, 29.65, 40, 59.3 and 80 MHz in this frequency band.

Keywords

Fixed service, point to point, channel bandwidth, channel arrangement, 6 GHz

Abbreviations

FWS Fixed wireless system

STM Synchronous transfer mode

Related ITU Recommendations and Reports

Recommendation ITU-R F.746 – Radio-frequency arrangements for fixed service systems

The ITU Radiocommunication Assembly,

considering

- a) that it is desirable to interconnect fixed wireless systems (FWSs) on international links in the 6 GHz band at radio frequencies (RF);
- b) that many interfering effects can be substantially reduced by a carefully planned arrangement of the radio frequencies in FWS employing several RF channels;
- c) that the use of digital modulation permits the use of the RF channel arrangements, originally defined for 1 800 telephone channel systems, for the transmission of digital channels with a bit rate of the order of synchronous digital hierarchy bit rates or equivalent or higher data rate traffic;
- d) that for these digital radio systems, further economies are possible by accommodating forward and return channels on a single antenna;
- e) that digital techniques such as cross-polar interference cancellers (XPIC) may significantly contribute to the cross-polar discrimination improvement factor (XIF, defined in Recommendation ITU-R F.746), thus counteracting multipath propagation-induced depolarization;
- f) that when very high-capacity links (e.g. twice STM-1, Synchronous Transfer Mode-1 or equivalent or higher data rate traffic) are required, further economy may be achieved using system bandwidths wider than the recommended channel separation, associated to high efficient modulation formats;
- g) that some administrations may need to deploy also low- and medium-capacity systems,