



Recommendation ITU-R M.2090-0
(10/2015)

**Specific unwanted emission limit of IMT
mobile stations operating in the frequency
band 694-790 MHz to facilitate protection of
existing services in Region 1 in the
frequency band 470-694 MHz**

M Series
**Mobile, radiodetermination, amateur
and related satellite services**

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 M.2090-0

**Specific unwanted emission limit of IMT mobile stations
operating in the frequency band 694-790 MHz to facilitate protection of
existing services in Region 1 in the frequency band 470-694 MHz**

(2015)

Scope

This Recommendation provides guidance to administrations on specific unwanted emission levels of IMT mobile stations operating in the frequency band 694-790 MHz in order to facilitate protection of existing services in the frequency band 470-694 MHz in Region 1.

The ITU Radiocommunication Assembly,

considering

- a) that Recommendations ITU-R M.1581 and ITU-R M.2071 specify the generic unwanted emission characteristics of IMT-2000 and IMT-Advanced mobile stations, respectively;
- b) that Recommendation ITU-R M.1036 provides the frequency arrangements of IMT networks, including those to be used in the band 694-790 MHz;
- c) that Resolution **232 (WRC-12)** has invited the ITU-R to study the compatibility between the mobile service and other primary services to which the frequency band is allocated, including in adjacent frequency bands;
- d) that the unwanted emissions in the frequency band 470-694 MHz from IMT mobile stations operating in Region 1 in the frequency band 694-790 MHz need to be limited in order to facilitate the compatibility with the broadcasting service below 694 MHz;
- e) that too stringent limits may lead to an increase in size, cost or in complexity of IMT radio equipment;
- f) the need to facilitate global harmonization, circulation of equipment, roaming and to promote economies of scale;
- g) that administrations decide on the IMT channel bandwidth and its location within the band 703-733 MHz which is to be used by the user equipment;
- h) that in some countries of Region 1 the deployment of IMT systems in the 700 MHz band is expected to start immediately after WRC-15,

recognizing

- a) that limitation of unwanted emissions from IMT mobile stations is one of the factors to facilitate the protection of the broadcasting service in the band 470-694 MHz;
- b) that the unwanted emission limits of the IMT mobile stations will:
 - help manage the risk of interference from mobile usage;
 - help achieve global harmonization of mobile stations;
- bbis*) that the unwanted emission limits of the IMT mobile stations need to be technically feasible from the point of view of practical implementation of IMT mobile stations;
- c) that different unwanted emission limits for IMT mobile stations operating in the 694-790 MHz band have been considered by Region 1 administrations including:

- –25 dBm/8 MHz for up to 20 MHz IMT channel bandwidth;
- –42 dBm/8 MHz for up to 10 MHz IMT channel bandwidth;
- –56 dBm/8 MHz for up to 10 MHz IMT channel bandwidth;

d) that administrations deploying IMT systems may take other measures in addition to the unwanted emission limits specified in *recommends* 1 and 2 to further improve the compatibility with the broadcasting service, depending on national conditions,

noting

a) that ITU-R studies were based on the lower duplexer of A5 channelling arrangement in Recommendation ITU-R M.1036 (i.e. uplink in 703-733 MHz) and a maximum output power of 23 dBm;

b) that an unwanted emission limit of –26.2 dBm/6 MHz for an IMT mobile station using the A5 channelling arrangement was developed within a regional organization of Region 3 and is included in the relevant 3GPP specification;

c) that new relevant 3GPP specifications contain an unwanted emission limit of –25 dBm/8 MHz for up to 20 MHz IMT channel bandwidth and a value of –42 dBm/8 MHz for 10 MHz IMT channel bandwidth;

d) that existing IMT mobile stations not complying with the unwanted emission limit referred to in *recommends* 2 might continue to be used,

recommends

1 that the unwanted emissions of an IMT mobile station operating in Region 1 in the frequency band 703-733 MHz with an IMT channel bandwidth greater than 10 MHz should not exceed –25 dBm/8 MHz into the frequency band 470-694 MHz;

2 that the unwanted emissions of an IMT mobile station operating in Region 1 in the frequency band 703-733 MHz with an IMT channel bandwidth of 10 MHz or less should not exceed –42 dBm/8 MHz into the frequency band 470-694 MHz;

3 that administrations should, when deciding on the relevant IMT channel bandwidth, take into account *recommends* 1 and 2.
