



Recommendation ITU-R M.1452-2
(05/2012)

**Millimetre wave vehicular collision
avoidance radars and radiocommunication
systems for intelligent transport
system applications**

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



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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 M.1452-2

Millimetre wave vehicular collision avoidance radars and radiocommunication systems for intelligent transport system applications

(Question ITU-R 205/5)

(2000-2009-2012)

Scope

This Recommendation provides system requirements, technical and operational characteristics of millimetre wave radiocommunication systems for intelligent transport system applications to be used for system design objectives. The Recommendation covers vehicular collision avoidance radar operating in the 76-77 GHz and 77-81 GHz bands, as well as integrated millimetre wave radiocommunication systems for ITS applications in the 57-66 GHz range for vehicle-to-vehicle radiocommunications and radiocommunications between the vehicle and roadside infrastructure.

The ITU Radiocommunication Assembly,

considering

- a) that intelligent transport systems (ITS) will significantly contribute to the improvement of transportation and public safety;
- b) that international standards would facilitate worldwide applications of ITS and provide for economies of scale in bringing ITS equipment and services to the public;
- c) that harmonization of ITS applications is dependent on common radio spectrum allocations;
- d) that high-capacity transmission systems will be required for ITS radiocommunication systems in order to support multimedia and high-resolution applications;
- e) that low-capacity transmission systems will also be required for ITS radiocommunication systems to support safe vehicle operation, such as a collision avoidance radar;
- f) that an integrated system of radar with radiocommunications is beneficial for safe driving and driver comfort;
- g) that millimetre wave high-speed ITS communication systems using radio-over-fibre technology have been intensively studied in research fora and industries;
- h) that millimetre wave frequencies have significant advantages and provide a wide bandwidth for such integrated ITS radar and communication systems;
- j) that millimetre wave frequencies are also used by other radio systems and services operating in accordance with the Radio Regulations;
- k) that strong absorption in a part of millimetre wave frequency ranges due to atmospheric oxygen and water vapour has a potential to reduce the interference among different radio services operating in the ranges;
- l) that technical and operational characteristics of integrated millimetre wave radiocommunication systems for ITS applications need to be identified to facilitate the global deployment of such a system,