

Recommendation ITU-R M.2162-0

(12/2023)

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

Technical and operational characteristics of radiolocation systems operating in the frequency range 92-100 GHz and radionavigation systems operating in the frequency range 95-100 GHz

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 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 <https://www.itu.int/pub/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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Technical and operational characteristics of radiolocation systems operating in the frequency range 92-100 GHz and radionavigation systems operating in the frequency range 95-100 GHz

(2023)

Scope

This Recommendation contains the technical and operational characteristics of the radiolocation and radionavigation systems operating in the frequency range 92-100 GHz. The parameters are intended to be used as a guideline in analysing compatibility between radars operating in the radiolocation service or in the radionavigation service with systems in other services.

Keywords

Radar, characteristics

Abbreviations/Glossary

EESS	Earth exploration-satellite service
FMCW	Frequency modulated carrier wave
FOD	Foreign object debris
I/N	Interference-to-noise ratio
RR	Radio Regulations

Related ITU Recommendations and Reports

Recommendation ITU-R F.699 – Reference radiation patterns for fixed wireless system antennas for use in coordination studies and interference assessment in the frequency range from 100 MHz to 86 GHz

Recommendation ITU-R M.1851 – Mathematical models for radiodetermination radar systems antenna patterns for use in interference analyses

Recommendation ITU-R M.1461 – Procedures for determining the potential for interference between radars operating in the radiodetermination service and systems in other services

Recommendation ITU-R M.1466 – Characteristics of and protection criteria for radars operating in the radionavigation service in the frequency band 31.8-33.4 GHz

The ITU Radiocommunication Assembly,

considering

- a) that antenna, signal propagation, target detection and large necessary bandwidth characteristics of radar to achieve their functions are optimum in certain frequency bands;
- b) that the technical characteristics of radars operating in the radiolocation and radionavigation services are determined by the mission of the system and vary widely even within a frequency band;
- c) that representative technical and operational characteristics of radars operating in the radiolocation and radionavigation services are required to determine, if necessary, the feasibility of introducing new types of systems into frequency bands allocated to the radiolocation and radionavigation services,