

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R M.1463-3 (02/2015)

Characteristics of and protection criteria for radars operating in the radiodetermination service in the frequency band 1 215-1 400 MHz

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



Foreword

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Series	Title
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BS	Broadcasting service (sound)
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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.1463-3*

Characteristics of and protection criteria for radars operating in the radiodetermination service in the frequency band 1 215-1 400 MHz

(2000-2007-2013-2015)

Scope

This Recommendation provides technical and operational characteristics, as well as protection criteria, of operational ground based radars in the frequency band 1 215-1 400 MHz. The Recommendation includes representative characteristics on the transmitter, receiver, and antenna components of these radars.

Keywords

Protection criteria, Airborne radar, Land based radar, Long range radar

Abbreviations/Glossary

CW Carrier wave

ESA Electronically steerable arrays

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 radiodetermination service are determined by the mission of the system and vary widely even within a frequency band;
- c) that the radionavigation service is a safety service as specified by No. 4.10 of the Radio Regulations (RR) and harmful interference to it cannot be accepted;
- d) that some Radiocommunication Study Groups are considering the potential for the introduction of new types of systems (e.g. fixed wireless access and high density fixed and mobile systems) or services in frequency bands between 420 MHz and 34 GHz used by radars in the radiodetermination service;
- e) that representative technical and operational characteristics of systems operating in frequency bands allocated to the radiodetermination service are required to determine the feasibility of introducing new types of systems;
- f) that procedures and methodologies are needed to analyse compatibility between radars operating in the radiodetermination service and systems in other services;
- g) that the frequency band 1 215-1 400 MHz is allocated to the radiolocation service on a primary basis;
- h) that the frequency band 1 300-1 350 MHz is allocated on a primary basis to the aeronautical radionavigation service, limited to ground-based radars and associated airborne transponders;

* This Recommendation should be brought to the attention of Radiocommunication Study Group 7 and the International Civil Aviation Organization (ICAO).

- i) that the frequency band 1 215-1 300 MHz is additionally allocated on a primary basis to the radionavigation service in many countries;
- j) that the frequency band 1 215-1 300 MHz is allocated to the radionavigation-satellite service (space-to-Earth) on a primary basis;
- k) that the frequency band 1 215-1 300 MHz is allocated to the Earth exploration-satellite (active) and space research (active) services on a primary basis;
- l) that the frequency band 1 350-1 400 MHz is allocated to the fixed and mobile services on a primary basis, in Region 1, and that the frequency band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis in the countries listed in RR No. 5.330,

recommends

- 1 that the technical and operational characteristics of the radiodetermination radars described in the Annex should be considered representative of those operating in the frequency band 1 215-1 400 MHz;
- 2 that Recommendation ITU-R M.1461 be used as a guideline in analysing compatibility between radars operating in the radiodetermination service with systems in other services;
- 3 that in the case of continuous (non-pulsed) single or aggregate interference, an interfering signal power to radar receiver noise power level, I/N , of -6 dB should be used as the required protection level for the radiodetermination radars;
- 4 that in the case of pulsed interference, the criteria should be based on a case-by-case analysis, considering the undesired pulse train characteristics and, to the extent possible, the signal processing in the radar receiver.

Annex

Technical and operational characteristics of radiodetermination radars operating in the frequency band 1 215-1 400 MHz

1 Introduction

The characteristics of radiodetermination radars operating worldwide in the frequency band 1 215-1 400 MHz are presented in Table 1, and described further in the following paragraphs. Those characteristics specifically for wind profiler radars are found in § 4 of this Annex.

2 Technical characteristics

The frequency band 1 215-1 400 MHz is used by many different types of radars on fixed, mobile (including airborne) and transportable platforms. Radiodetermination functions performed in the frequency band include long range search tracking and surveillance. Radar operating frequencies can be assumed to be uniformly spread throughout the frequency band 1 215-1 400 MHz. Table 1 contains technical characteristics of representative radiolocation and radionavigation radars deployed in the frequency band 1 215-1 400 MHz.