

Recommendation ITU-R RS.1263-3

(12/2023)

RS Series: Remote sensing systems

**Interference criteria for meteorological
aids operated in the 400.15-406 MHz and
1 668.4-1 700 MHz bands**

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 <https://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 RS.1263-3

Interference criteria for meteorological aids operated in the 400.15-406 MHz and 1 668.4-1 700 MHz bands

(1997-2010-2018-2023)

Scope

This Recommendation provides interference criteria data which should be used for compatibility and sharing studies for MetAids operating in the 400.15-406 MHz and 1 668.4-1 700 MHz bands.

Related ITU-R Recommendations and Reports

Recommendation ITU-R P.528 – Propagation curves for aeronautical mobile and radionavigation services using the VHF, UHF and SHF bands

Recommendation ITU-R RS.1165 – Technical characteristics and performance criteria for systems in the meteorological aids service in the 403 MHz and 1 680 MHz bands

Recommendation ITU-R SA.1021 – Methodology for determining performance objectives for systems in the Earth exploration-satellite and meteorological-satellite services

Keywords

MetAids, radiosondes, rocketsondes, dropsondes

Abbreviations/Glossary

AM	Amplitude modulation
FM	Frequency modulation
FSK	Frequency shift keying
GFSK	Gaussian frequency shift keying
MetAids	Meteorological aids
METSAT	Meteorological satellite
MSS	Mobile satellite service
NAVAID	Navigational aid
QAM	Quadrature amplitude modulation

The ITU Radiocommunication Assembly,

considering

- a) that interference criteria are needed to ensure that systems can be designed to achieve adequate performance in the presence of interference;
- b) that the performance objectives for radiosonde, dropsonde, and rocketsonde systems are specified in Recommendation ITU-R RS.1165;
- c) that interference criteria assist in the development of criteria for sharing bands among systems, including those operating in other services;
- d) that systems in the meteorological aids (MetAids) service must specify interference thresholds at least equal to the permissible levels,

recommends

that the interference levels specified in Tables 1, 2 and 3 should be used as the permissible total levels of interfering signal power at the antenna output of receiving stations operating in the MetAids service based on the MetAids parameters of representative systems as provided in Annex 1.

TABLE 1

Interference criteria for radiosonde systems in the MetAids service operating in the frequency band 1 668.4-1 700 MHz⁽¹⁾

Parameter	Radio direction finding (RDF) radiosonde system 1 668.4-1 700 MHz	GPS radiosonde system 1 675-1 683 MHz
System reference bandwidth (kHz)	1 300	150
Interference signal power (dBW) in the reference bandwidth to be exceeded no more than $P_{LOCK-LOSS}$ % of the time	-135.3	-137.2
Percentage of time, $P_{LOCK-LOSS}$ (%) ⁽²⁾	0.02	0.025
Interference signal power (dBW) in the reference bandwidth to be exceeded no more than $P_{DATA-LOSS}$ % of the time	-148.5	-145.7
Percentage of time, $P_{DATA-LOSS}$ (%) ⁽²⁾	0.08	0.125
Interference signal power (dBW) in the reference bandwidth to be exceeded no more than 20% of the time ⁽²⁾	-149.36	-151.51

⁽¹⁾ See § 3 for link margin calculations and § 4 for derivation of interference signal power levels.

⁽²⁾ This percentage of time shall not be exceeded on a per-flight basis.