



Recommendation ITU-R M.1173-1
(03/2012)

Technical characteristics of single-sideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz

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.1173-1*

**Technical characteristics of single-sideband transmitters used in
the maritime mobile service for radiotelephony in the bands
between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz
and between 4 000 kHz and 27 500 kHz**

(1995-2012)

Scope

This Recommendation provides the technical characteristics for single sideband transmitters used in the MF/HF maritime mobile service bands.

The ITU Radiocommunication Assembly,

considering

a) that there is a need to describe the technical characteristics of single-sideband transmitters for the bands 1 606.5 kHz (1 605 kHz Region 2) to 4 000 kHz and 4 000 kHz to 27 500 kHz,

recommends

1 that single-sideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz should be designed to meet the technical characteristics shown in Annex 1.

Annex 1

**Technical characteristics of single-sideband transmitters used in
the maritime mobile service for radiotelephony in the bands
between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz
and between 4 000 kHz and 27 500 kHz**

- 1 Power of the carrier:
For class J3E emissions the power of the carrier shall be at least 40 dB below the peak envelope power.
- 2 Coast and ship stations shall use only the upper sideband.
- 3 The transmitter audio-frequency band shall be 350 Hz to 2 700 Hz with a permitted amplitude variation of 6 dB.
- 4 The carrier frequencies shall be maintained within the tolerances specified in Appendix 2 to the Radio Regulations.

* This Recommendation should be brought to the attention of the International Maritime Organization (IMO), the International Electrotechnical Commission (IEC) and the Comité International Radio Maritime (CIRM).

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- 5 The unwanted frequency modulation of the carrier shall be sufficiently low to prevent harmful distortion.
- 6 When class H3E or J3E emissions are used, the power of any unwanted emission supplied to the antenna transmission line on any discrete frequency shall, when the transmitter is driven to full peak envelope power, be in accordance with the following table:

Separation Δ between the frequency of the unwanted emission and the assigned frequency (kHz)	Minimum attenuation below peak envelope power
1.5 < Δ \leq 4.5	31 dB
4.5 < Δ \leq 7.5	38 dB
7.5 < Δ	43 dB without the unwanted emission power exceeding the power of 50 mW

Transmitters using suppressed carrier emission may, as far as concerns out-of-band emissions and those spurious emissions which are a result of the modulation process but do not fall in the spectrum of out-of-band emissions, be tested for compliance with this regulation by means of a two-tone-audio input signal with a frequency separation between the tones such that all intermodulation products occur at frequencies at least 1.5 kHz removed from the assigned frequency.
