RECOMMENDATION ITU-R M.1174-2*

Technical characteristics of equipment used for on-board vessel communications in the bands between 450 and 470 MHz

(1995-1998-2004)

Summary

This Recommendation describes the technical characteristics for equipment operating in the maritime mobile services in accordance with the provisions of No. 5.287 of the Radio Regulations (RR) for on-board vessel communications. Provision is made for 25 kHz or 12.5 kHz channel spacing.

The ITU Radiocommunication Assembly,

considering

a) that there is a need to describe the characteristics of equipment for on-board vessel communications in the bands between 450 and 470 MHz;

b) that changes have recently been made to the frequency availability;

c) Resolution 341 (WRC-97),

recommends

1 that transmitters and receivers used in the maritime mobile service for on-board vessel communications in the bands between 450 and 470 MHz should conform to the technical characteristics shown in Annex 1.

Annex 1

Technical characteristics of equipment used for on-board vessel communications in the bands between 450 and 470 MHz

1 The equipment should be fitted with sufficient channels for satisfactory operation in the area of intended use.

2 The effective radiated power should be limited to the maximum required for satisfactory operations, but should in no case exceed 2 W. Wherever practicable the equipment should be fitted with a suitable device to reduce readily the output power by at least 10 dB.

3 In the case of equipment installed at a fixed point on the ship, the height of its antenna should not be more than 3.5 m above the level of the bridge.

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* This Recommendation should be brought to the attention of the International Maritime Organization (IMO) and the International Maritime Radio Committee (CIRM).

	25 kHz channels	12.5 kHz channels
4	Only frequency modulation with a pre-emphasis of 6 dB/octave (phase modulation) should be used.	Only frequency modulation with a pre-emphasis of 6 dB/octave (phase modulation) should be used.
5	The frequency deviation corresponding to 100% modulation should approach ±5 kHz as nearly as practicable. In no event should the frequency deviation exceed ±5 kHz.	The frequency deviation corresponding to 100% modulation should approach ±2.5 kHz as nearly as practicable. In no event should the frequency deviation exceed ±2.5 kHz.
6	The frequency tolerance should be 5 parts in 10^6.	The frequency tolerance should be 2.5 parts in 10^6.
7	The audio-frequency band should be limited to 3000 Hz.	The audio-frequency band should be limited to 2550 Hz.

8 Control, telemetry and other non-voice signals such as paging, should be coded in such a manner as to minimize the possibility of false response to interfering signals. The frequencies specified in RR No. 5.287 for on-board communications may be used for single frequency and two-frequency simplex operation.

9 When used in the duplex mode the base transmitter frequency should be selected from the lower range for improved operability.

10 If the use of a repeater station is required on board a ship, the following frequency pairs should be used (see RR No. 5.287 and 5.288):

457.525 MHz and 467.525 MHz
457.550 MHz and 467.550 MHz
457.575 MHz and 467.575 MHz
457.5375 MHz and 467.5375 MHz
457.5625 MHz and 467.5625 MHz.

11 Frequencies

The frequencies specified in RR No. 5.287 (subject to national regulations) may be used:

For 25 or 12.5 kHz channel spacing:

457.525 MHz
457.550 MHz
457.575 MHz
467.525 MHz
467.550 MHz
467.575 MHz.

For equipment designed to operate with 12.5 kHz channel spacing the additional frequencies referred to in RR No. 5.287 are:

457.5375 MHz
457.5625 MHz
467.5375 MHz
467.5625 MHz.