



Recommendation ITU-R M.690-3
(03/2015)

**Technical characteristics of
emergency position-indicating radio
beacons operating on the carrier
frequencies of 121.5 MHz and 243 MHz**

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.

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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.690-3

**Technical characteristics of emergency position-indicating radio beacons
operating on the carrier frequencies of 121.5 MHz and 243 MHz**

(1990-1995-2012-2015)

Scope

This Recommendation contains technical characteristics to which emergency position-indicating radio beacons (EPIRBs) intended to operate on the carrier frequency of 121.5 MHz and 243 MHz should conform.

Additional characteristics for EPIRBs intended for carriage on aircraft are specified in relevant annexes to the Convention on International Civil Aviation.

Keywords

Maritime, EPIRB, 121.5 MHz, 243 MHz, characteristics

Abbreviations/Glossary

EPIRB Emergency position-indicating radio beacon

ICAO International Civil aviation Organization.

The ITU Radiocommunication Assembly,

considering

- a) that the Radio Regulations define the purpose of emergency position-indicating radio beacon (EPIRB) signals;
- b) that administrations authorizing the use of EPIRBs operating on carrier frequencies of 121.5 MHz and 243 MHz should ensure that such EPIRBs comply with relevant ITU-R Recommendations and the standards and recommended practices of ICAO,

recommends

1 that the technical characteristics of EPIRBs operating on the carrier frequencies of 121.5 MHz and 243 MHz should be in accordance with Annex 1.

Annex 1**Technical characteristics of emergency position-indicating radio beacons
operating on the carrier frequencies of 121.5 MHz and 243 MHz**

EPIRBs operating on the carrier frequencies of 121.5 MHz and 243 MHz should fulfil the following conditions (see Note 1):

- a) emission in normal antenna conditions and positions should be vertically polarized and be essentially omnidirectional in the horizontal plane;
- b) carrier frequencies should be amplitude-modulated (minimum duty cycle of 33%), with a minimum depth of modulation of 0.85;

- c) the emission should consist of a characteristic audio-frequency signal obtained by amplitude modulation of the carrier frequencies with an upward or a downward audio-frequency sweep within a range of not less than 700 Hz between 300 Hz and 1 600 Hz and with a sweep repetition rate of two to four times per second;
- d) the emission should include a clearly defined carrier frequency distinct from the modulation sideband components; in particular, at least 30% of the power should be contained at all times within:
 - ±30 Hz of the carrier frequency on 121.5 MHz;
 - ±60 Hz of the carrier frequency on 243 MHz;
- e) the class of emission should be A3X; however, any type of modulation which satisfies the requirements laid down in b), c) and d) above may be used, provided it does not impair the precise locating of the radio beacon.

NOTE 1 – Additional characteristics for EPIRBs aboard aircraft are specified in the relevant annexes to the Convention on International Civil Aviation.
