



**SLOVENSKI STANDARD**  
**SIST ETS 300 152:1999**  
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Radio Equipment and Systems (RES); Maritime Emergency Position Indicating Radio Beacons (EPIRBs) intended for use on the frequency 121.5 MHz or the frequencies 121.5 MHz and 243 MHz for homing purposes only Technical characteristics and methods of measurement

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**the frequency 121,5 MHz or the frequencies**  
**121,5 MHz and 243 MHz for homing purposes only**

**Technical characteristics and methods of measurement**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Systems and Equipment (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI) and has undergone the ETSI approvals procedure.

This standard lays down the minimum requirements for maritime Emergency Position Indicating Radio Beacons (EPIRBs) operating on certain frequencies, and incorporates the relevant provisions of the International Telecommunication Union (ITU) Radio Regulations and the relevant standards of the International Civil Aviation Organization (ICAO).

Every ETS prepared by ETSI is a voluntary standard. This ETS contains text concerning the type approval of the equipment to which it relates. This text should be considered only as guidance and does not make this ETS mandatory.

Annex A to this ETS is normative.

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## 1 Scope

This European Telecommunication Standard (ETS) states the minimum requirements for maritime Emergency Position-Indicating Radio Beacons (EPIRBs), and incorporates the provisions of the ITU Radio Regulations and the relevant standards of the International Civil Aviation Organisation.

EPIRBs are defined as stations in the maritime mobile service, the emissions of which are intended to facilitate search and rescue operations.

The EPIRBs described in this ETS are intended only for transmission of radio signals on the frequency 121,5 MHz or the frequencies 121,5 MHz and 243 MHz for locating vessels and survival craft in distress.

This ETS also applies to EPIRBs intended for very short range man-overboard location applications. For this application, both the radiated power and the length of time for operation are reduced to enable the equipment to be sufficiently small and light to be worn comfortably at all times.

## 2 General requirements

### 2.1 Construction

In all respects, the mechanical and electrical design and the construction and finish of the equipment shall conform with good engineering practice.

The equipment shall be designed to minimise the risk of internal and external damage during use or stowage.

The exterior of the equipment shall have no sharp edges or projections which could easily damage inflatable rafts or injure personnel.

The general construction and method of operation shall provide a high degree of proof against inadvertent operation due to magnetic influences, handling, stowage and transit, whilst still providing a simple means of operation in an emergency.

The equipment shall be portable, lightweight, and compact and be designed as one integral unit. The EPIRB shall derive its energy from a battery forming a part of the equipment and incorporate a permanently attached antenna which may be either fixed length or extendable.

The EPIRB may be fitted with a test facility by which the functioning of the transmitter and battery can be easily tested without the use of any external equipment.

The equipment shall be capable of being used by an unskilled person and only be capable of manual activation and deactivation.

The EPIRB shall be watertight and buoyant.

The equipment shall be provided with an indication that signals are being emitted. The indication to the user shall be either an audible or visual indication, clearly discernible under all ambient conditions.

A substantial part of the equipment shall be of highly visible yellow or orange colour to assist visual location.

The equipment shall not be unduly affected by sea water or oil and shall be resistant to deterioration by prolonged exposure to sunlight.

Necessary operating instructions shall be provided with the equipment.

## 2.2 Controls

The equipment shall be initially activated by the use of two simple, but independent mechanical actions, neither of which on its own shall activate the equipment. For equipment relating solely to man-overboard location applications, the second mechanical action may be replaced by a total immersion sensor.

The equipment shall not be capable of automatic activation, except in the case of the second operation for man-overboard devices only.

Initial activation shall break a seal which shall not be replaceable by the user. This seal shall not be broken when using the test facility.

After activation it shall be simple to de-activate the equipment.

The switch which operates any test facility (subclause 2.1, sixth paragraph), shall be so designed that it returns automatically to the off-position when released.

## 2.3 Labelling

The equipment shall be provided with a label, or labels, permanently affixed to the exterior of the equipment, containing the following information:

- type designation of the equipment;
- adequate instructions to enable the equipment to be activated and de-activated;
- the type of battery as specified by the manufacturer of the EPIRB;
- a warning to the effect that the EPIRB should not be operated except in an emergency.
- the date on which the battery will need to be replaced. Simple means shall be provided for changing this date when the battery is replaced.

## 2.4 Requirements for conformity testing purposes

To assist the testing authority, complete technical and operational documentation shall be provided with the equipment.

For the purpose of conformity testing, 3 sets of batteries shall be submitted.

## 2.5 Battery

The battery provided as a power source shall have sufficient capacity to operate the equipment for an uninterrupted period of at least 24 hours, or for man-overboard devices only, at least 6 hours, under all temperature conditions, (see subclause 3.6.1), within the requirements of this ETS.

The type of battery specified by the manufacturer for use in the equipment shall be clearly stated on the equipment.

The battery shall be clearly and durably marked with the expiry date.

Provisions shall be made for protecting the equipment from damage due to accidental reversal of polarity of the battery.

### 3 Test conditions, power sources and ambient temperatures

#### 3.1 Test frequencies

For the purpose of conformity testing, the EPIRB shall be provided with the frequencies specified by the administration of the country in which the test is carried out.

#### 3.2 Test fixture

The manufacturer shall supply a test fixture permitting relative measurements to be made on the submitted sample. This test fixture shall provide a 50 ohm radio frequency terminal at the working frequencies of the equipment.

The performance characteristics of the test fixture, under normal and extreme conditions, shall be subjected to the approval of the testing authority. The following characteristics shall apply:

- the coupling loss shall be as low as possible and in no case greater than 30 dB;
- the variation of coupling loss with frequency shall not cause measurement errors exceeding 2 dB;
- the coupling device shall not incorporate any non-linear elements;
- the power consumption of the EPIRB shall not change substantially when fitted in the test fixture.

Any connections provided on the equipment in order to facilitate relative measurements shall not affect the performance of the equipment, neither in the test fixture nor when making measurements involving the use of radiated fields.

#### 3.3 Normal and extreme test conditions

Conformity testing shall be carried out under normal and extreme test conditions, unless otherwise stated.

#### 3.4 Test power source

Where stated, the battery of the equipment shall be replaced by a test power source capable of producing normal and extreme test voltages as specified in subclauses 3.5.2 and 3.6.2.

#### 3.5 Normal test conditions

##### 3.5.1 Normal temperature

Normal temperature and humidity conditions for tests shall be any convenient combination of temperature and humidity, within the following ranges:

Temperature: + 15 °C to + 35 °C

Relative humidity: 20 % to 75 %

##### 3.5.2 Normal test voltage

The normal test voltage shall be determined in each case and shall be the voltage corresponding to the voltage which the battery gives at normal temperature and humidity at a load equal to that of the equipment.