# SLOVENSKI STANDARD
# SIST EN 300 718-2 V2.1.1:2018

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**Lavinske žolne, ki delujejo v območju 457 kHz - Oddajno-sprejemni sistemi - 2. del: Harmonizirani standard za funkcije storitev v sili**

Avalanche Beacons operating at 457 kHz - Transmitter-receiver systems - Part 2: Harmonised Standard for features for emergency services



**Ta slovenski standard je istoveten z:** **ETSI EN 300 718-2 V2.1.1 (2018-01)**



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**ICS:**

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| 13.200 | Preprečevanje nesreč in katastrof | Accident and disaster control |
| 33.060.20 | Sprejemna in oddajna oprema | Receiving and transmitting equipment |

**SIST EN 300 718-2 V2.1.1:2018** **en**

# ETSI EN 300 718-2 V2.1.1 (2018-01)


# Avalanche Beacons operating at 457 kHz; Transmitter-receiver systems; Part 2: Harmonised Standard for features for emergency services

Reference
REN/ERM-TG28-512-2

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***ETSI***

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88



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# Contents

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# Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).



The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.2] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.1].



Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

The present document implements requirements laid down in Commission Decision 2001/148/EC [i.3].

The present document is part 2 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

| National transposition dates | |
|---|---|
| Date of adoption of this EN: | 18 December 2017 |
| Date of latest announcement of this EN (doa): | 31 March 2018 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 30 September 2018 |
| Date of withdrawal of any conflicting National Standard (dow): | 30 September 2019 |

# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

# 1 Scope

The present document specifies technical characteristics and methods of measurements for avalanche beacons operating at 457 kHz transmitter-receiver systems.

NOTE: The relationship between the present document and essential requirements of article 3.3g of Directive 2014/53/EU [i.1] is given in annex A.

# 2 References

## 2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI EN 300 718-1 (V2.1.1) (01-2018): "Avalanche Beacons operating at 457 kHz; Transmitter-receiver systems; Part 1: Harmonised standard for access to radio spectrum".



## 2.2 Informative references



References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

[i.2] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.

[i.3] Commission Decision 2001/148/EC of 21 February 2001 on the application of Article 3(3)(e) of Directive 1999/5/EC to avalanche beacons.

[i.4] EN 60068-2-5-2011: "Environmental testing. Tests. Test Sa. Simulated solar radiation at ground level and guidance for solar radiation testing".

[i.5] ETSI TR 100 028 (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

# 3 Definitions, symbols and abbreviations

For the purposes of the present document, the terms and definitions, symbols and abbreviations given in ETSI EN 300 718-1 [1], clause 3, apply.

# 4 Technical requirements specifications

## 4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the manufacturer. The equipment shall comply with all the technical requirements of the present document which are identified as applicable in annex A at all times when operating within the boundary limits of the declared operational environmental profile.

## 4.2 Environmental conformance requirements

### 4.2.1 General requirements

Environmental tests shall be carried out before tests of the same equipment in respect to the other requirements of the present document are performed. The following tests shall be carried out in the order they appear in clause 4.2.

Where electrical tests are required the equipment shall be powered by its internal battery.



### 4.2.2 Drop test on hard surface



#### 4.2.2.1 Description

The immunity against the effects of dropping is the ability of the equipment to maintain the specified mechanical and electrical performance after being subjected to a series of drops on a hard wooden test surface.

#### 4.2.2.2 Method of measurement

The test shall consist of a series of 6 drops, one on each surface.

During the test the equipment shall be fitted with a suitable set of batteries and it shall be switched on in transmit mode. The test shall be carried out under normal temperature and humidity conditions.

The hard wooden test surface shall consist of a piece of solid hard wood with a minimum thickness of 15 cm and a mass of 30 kg or more.

The height of the lowest part of the equipment under test relative to the test surface at the moment of release shall be 1 m.

Equipment shall be subjected to the present document configured for use as in operational circumstances.

#### 4.2.2.3 Requirements

After the test, the equipment shall be fully operational in both the transmit and the receive modes. The requirement shall be checked by interacting with another sample of the same equipment to form a transmitter - receiver pair.

### 4.2.3 Temperature tests

#### 4.2.3.1 General

The maximum rate of raising or reducing the temperature of the chamber in which the equipment is being tested shall be 1 °C/minute.

#### 4.2.3.2 Dry heat cycle

The equipment shall be placed in a chamber of normal temperature. The temperature shall then be raised to and maintained at the upper extreme storage temperature (±3 °C) for a period of at least 10 hours. After this period any climatic control device provided in the equipment may be switched on and the chamber cooled to the upper extreme operating temperature (±3 °C). The cooling of the chamber shall be completed within 30 minutes. The equipment shall then be switched on and shall be kept working continuously in transmitting mode for a period of two hours.

The temperature of the chamber shall be maintained at the upper extreme operating temperature (±3 °C) during the two hour period.

At the end of the test, and with the equipment still in the chamber, the chamber shall be brought to room temperature in not less than one hour. The equipment shall then be exposed to normal room temperature and humidity for not less than three hours before the next test is carried out.

#### 4.2.3.3 Low temperature cycle

The equipment shall be placed in a chamber at normal room temperature. Then the temperature shall be reduced to, and maintained at, the lower extreme storage temperature (±3 °C) for a period of at least 10 hours.



The chamber shall be warmed to the lower extreme operating temperature (±3 °C). The warming of the chamber shall be completed within 30 (±5) minutes. The equipment shall then be switched on and shall be kept working continuously in transmitting mode for a period of two hours.



The temperature of the chamber shall be then maintained at the lower extreme operating temperature (±3 °C) during the two hour period.

At the end of the test, and with the equipment still in the chamber, the chamber shall be brought to room temperature in not less than one hour. The equipment shall then be exposed to normal room temperature for not less than three hours, or until moisture has dispersed, whichever is longer, before the next test is carried out.

#### 4.2.3.4 Requirements

After the dry heat and the low temperature cycles, the equipment shall be fully operational in both the transmit and the receive modes. The requirement shall be checked by interacting with another sample of the same equipment to form a transmitter - receiver pair.

### 4.2.4 Immersion test

#### 4.2.4.1 Method of measurement

The equipment shall be immersed into water for one hour in a horizontal position at a depth of 15 cm. The equipment and the water shall both be at room temperature. The device shall be transmitting while immersed.

#### 4.2.4.2 Requirements

The equipment shall be able to transmit during and after immersion. The requirement shall be checked by interacting with another sample of the same equipment to form a transmitter - receiver pair.