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STN	**Ovládače zvukovej frekvenčnej indukčnej slučky do 45 ampérov vo frekvenčnom rozsahu od 10 Hz do 9 kHz** **Harmonizovaná norma pre prístup k rádiovému spektru**	**STN** **EN 303 348 V1.2.1** 87 3348

Audio frequency induction loop drivers up to 45 amperes in the frequency range 10 Hz to 9 kHz; Harmonised Standard for access to radio spectrum

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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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.8] 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.

National transposition dates	
Date of adoption of this EN:	26 May 2021
Date of latest announcement of this EN (doa):	31 August 2021
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2022
Date of withdrawal of any conflicting National Standard (dow):	28 February 2023

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).

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Introduction

Audio Frequency Induction Loop System (AFILS) has been on the market since the middle of the twentieth century, with the first recognizable patents appearing circa 1938. AFILS are primarily used to facilitate improved communication to people with impaired hearing and are an important tool in the reduction of discrimination against disabled people. They are also used in a number of industries including Broadcast and studio.

The present document covers the "drivers" for the loop antenna and represents the performance of equipment which is currently on the market, which has not previously been subjected to compliance to a "radio" directive.

AFILS are installed in places of worship, places of entertainment, places of education, ticket booths and service counters, etc. as well as in domestic situations, providing huge benefits to users with impaired hearing.

AFILS provide an audio frequency magnetic field that couples with a receiving coil (telecoil) fitted in hearing aids, cochlear implants, loop listeners and testing devices. This magnetic field is generated in a wire loop that is fed by an audio frequency driver which is capable of driving current through the "induction loop" which, in turn, is fed from external signals such as those generated by microphones, audio-visual equipment and musical instruments.

AFILS operate below 9 kHz and have a very limited range (some few metres) and there is no known evidence of interference with radio equipment.

AFILS are provided in a range of sizes and can cover areas up to approximately 3 000 m^2. They are also used in vehicles and lifts and interaction with structural metal means that a complete AFILS can only be tested when fitted in their final location. This means that the "Loop" is as an external antenna which is not covered by the Radio Equipment Directive [i.1] and the present document only covers "Drivers".

The market for AFILS is relatively small compared with technologies such as RFID, and is physically separated from most radio systems, so the opportunity for mutual interference problems is reduced compared to other users of the spectrum in this frequency range.

As AFILS drivers use base band audio signals without additional carrier tones, and so when no input signal is present, there will be no output signal and so no magnetic field will be generated, ensuring spectrum efficiency.

The present document has been developed in response to Directive 2014/53/EU [i.1] and is the first radio standard that has been produced for AFILS equipment and has been prepared to allow the assessment of audio frequency induction loop drivers and receivers for compliance with Directive 2014/53/EU [i.1].

1 Scope

The present document specifies technical characteristics and methods of measurements for audio frequency induction loop drivers operating from 10 Hz to 9 kHz used in Audio Frequency Induction Loop System (AFILS) with an upper limit of 45 A_{rms}.

NOTE 1: The object of an AFILS is to transmit an audio signal to people with hearing difficulties. The receiver in this case is normally a hearing aid or cochlear implant with a built in telecoil, both of which are covered by ETSI EN 300 422-4 [i.11].

These radio equipment types are capable of operating in the frequency band within the 10 Hz to 9 kHz range:

- with (an) output connection(s);
- for audio frequency baseband transmission (un-modulated and without the use of a carrier).

The present document covers induction loop drivers with output connectors. Integral antenna systems are covered by ETSI EN 300 422-4 [i.11].

NOTE 2: The relationship between the present document and essential requirements of article 3.2 of Directive 2014/53/EU [i.1] is given in annex A.

2 References

2.1 Normative 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.

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

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

[1] Void.

[2] CEPT/ERC/Recommendation 74-01E (Siófok 98, Nice 99, Sesimbra 02, Hradec Kralove 05, Cardiff 11): "Unwanted Emissions in the Spurious Domain".

2.2 Informative references

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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] Void.

[i.3] Void.

[i.4] IEC 60118-4:2014: "Electroacoustics - Hearing aids - Part 4: Induction loop systems for hearing aid purposes - Magnetic field strength".

[i.5] Void.

[i.6] Void.

[i.7] Void.

[i.8] 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.9] Void.

[i.10] Void.

[i.11] ETSI EN 300 422-4: "Wireless Microphones; Audio PMSE up to 3 GHz; Part 4: Assistive Listening Devices including personal sound amplifiers and inductive systems up to 3 GHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU".