



SLOVENSKI STANDARD SIST ETS 300 224 E1:2003

01-december-2003

Radijska oprema in sistemi (RES) – Storitve osebnega klica na kraju samem – Tehnične in funkcijske karakteristike za sisteme osebnega klica na kraju samem, vključno s preskusnimi metodami

Radio Equipment and Systems (RES); On-site paging service; Technical and functional characteristics for on-site paging systems, including test methods

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Ta slovenski standard je istoveten z: **ETS 300 224 Edition 1**

ICS:

33.060.20	Sprejemna in oddajna oprema	Receiving and transmitting equipment
33.070.20	Sistem za osebni klic	Paging systems

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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 224

May 1994

Source: ETSI TC-RES

Reference: DE/RES-8-02

ICS: 33.060

Key words: Radio, on-site paging

**Radio Equipment and Systems (RES);
On-site paging service
Technical and functional characteristics
for on-site paging systems,
including test methods**

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Foreword

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

This ETS is based mainly on CEPT Recommendation T/R 20-05 and ESPA publications 4.2.6 and 4.2.6.a.

In this ETS the operational aspects of the on-site paging service have been included.

In preparing this ETS, much attention has been given to assure a low interference probability, while at the same time allowing a maximum flexibility and service to the end-user.

This ETS does not include performance characteristics that may be required by the user or requirements for interfacing equipment.

The conditions for licensing as well as conditions for interfacing to PSTN are determined by the appropriate authorities.

Every ETS prepared by ETSI is a voluntary standard. This ETS contains text concerning type approval of the equipment to which it relates. This text should be considered only as guidance and does not make this ETS mandatory in its status as a standard. However, this ETS can be referenced, wholly or in part, for mandatory application by decisions of regulatory bodies.

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1 Scope

This ETS specifies the minimum performance characteristic and the related methods of measurement for on-site paging transmitters and receivers. Although this ETS covers the general operational aspects of on-site paging systems, it is restricted to the wireless (radio and loop) communications of the service. It is assumed that the radio type of system will operate in the frequency range of 25 MHz to 470 MHz, and loop systems below 150 kHz.

This ETS does not cover radiation below 25 MHz, except for the output of loop equipment.

Additional standards or specifications may be required for equipment intended to interface to the Public Switched Telephone Network (PSTN).

This ETS may be used by accredited test laboratories for type testing of the equipment.

This ETS also contains instructions for the presentation of equipment for type testing purposes.

The types of equipment covered by this ETS are as follows:

- base station transmitters (radio and loop), with or without an external 50 W antenna connector;
- base station receivers, with a permanent 50 W connector;
- pocket unit (receiver, transceiver or transmitter), with or without an external 50 W antenna connector.

Annex A: provides information concerning test sites and general arrangements for measurements involving the use of radiated fields.

Annex B: provides information concerning the on-site paging service.

Annex C: provides normative information concerning measuring support for pocket equipment.

Annex D: contains normative specifications for adjacent channel power measuring receiver.

Annex E: is a graphic representation of the normative subclause 10.4.1.3 referring to the limits for spurious radiations of loop receivers.

Annex F: contains a list of informative references.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETR 027: "Radio Equipment and Systems (RES); Methods of measurement for mobile radio equipment".
- [2] ETR 028: "Radio Equipment and Systems (RES); Uncertainties in the measurement of mobile radio equipment characteristics".

3 Definitions and abbreviations

3.1 Definitions

For the purpose of this ETS, the following definitions apply:

Constant envelope modulation: either phase or frequency modulation with or without pre-emphasis.

Integral antenna: an antenna designed as an indispensable part of the equipment, with or without the use of an antenna connector.

Coded messages: the transmission of messages to a paging receiver via coded signals.

Base station transmitter: transmitter intended for use in a fixed location.

Base station receiver: receiver intended for use in a fixed location.

Pocket unit: pocket size equipment fitted with an integral antenna carried on a person or held in the hand.

Preamble facility: a signal, needed in a system in which a battery saving system is used, in order to activate and prepare receivers for the calls to come.

Category AR1: see subclause 5.1.3.

Category AR2: see subclause 5.1.3.

3.2 Abbreviations

For the purpose of this ETS, the following abbreviations apply:

dBm	Decibels relative to 1 mW
emf	electro-motive force
LF	The frequency range 30 kHz to 300 kHz (Low Frequency)
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
RF	Radio Frequency
rms	root-mean-squared
Rx	Receiver
SINAD	(Signal + Noise And Distortion) / (Noise + Distortion) ratio
Tx	Transmitter
VLF	The frequency range 3 kHz to 30 kHz (Very Low Frequency)
VSWR	Voltage Standing Wave Ratio

4 Functional characteristics

4.1 On-site paging system description

An on-site paging system is a privately owned and operated, wireless communication system, used in a restricted and predefined area, with the primary function to alert and/or inform ambulant people. The air interface of the system, using a single radio channel, comprises at least one transmitter.

The paging system may be extended with a return frequency. This return or talk-back frequency is mainly used for call acknowledgement but may also be used to supply some of the features of a mobile radio service or other two-way radio services, without the need to use a separate system.

The radio part of an approved on-site paging system is made up exclusively from equipment that has been approved according to this ETS. Other equipment that may be connected to it shall fulfil the standards applicable to that equipment (if any).

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Annex B provides a more detailed description of the on-site paging system.

4.2 On-site paging system basic services

The main services that can be obtained through an on-site paging system are a function of the capabilities of the pocket units.

The simplest and most well known paging receiver is a selective call receiver with an alerting device. When paged, the pocket unit generates a certain alerting pattern and the user should take some pre-determined actions. The receiver may also receive a spoken message after the alert signal.

When the receiver is equipped with a visual display, limited text messages can be presented to the user by additional transmission of data. If the receiver is equipped with a transmitter, the user can acknowledge a message and/or establish a speech connection.

System configurations include:

- alert only;
- alert + data one way;
- alert + data two ways;
- alert + voice one way;
- alert + voice two ways;
- alert + data + voice one way;
- alert + data + voice two ways;

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Different users have different communication requirements. Therefore, most paging systems allow any mixture of pocket units. The size of an on-site paging system, in number of pocket units, may vary from one to several thousand units.

4.3 Description of additional functional characteristics

Call acknowledgement facility: call acknowledgement is the feature enabling the transmission of a short signal from the pocket unit to the base station(s) to confirm the reception of a call.

Dial-in facility: dial-in is the facility whereby a pocket transceiver forming part of a paging system is able to initiate a call to the base station(s).

Dial-out facility: dial-out is the facility allowing a pocket paging transceiver to initiate a call, via a base station, to another external on-site communication network, accessible from the paging system, e.g. a Private Branch Exchange (PBX).

Dial-through facility: dial-through is the facility allowing a pocket paging transceiver to initiate a call to another pocket unit belonging to the same paging system via the base station.

Periodic calls facility: periodic calls are paging calls which are transmitted at regular intervals by the base station(s) e.g. "time of day" and "out of range".

Preamble facility: a preamble is a signal needed in a system in which a battery saving system is used in order to activate and prepare receivers for the calls to come.