
Radijska oprema in sistemi (RES) - Storitve osebne klica na kraju samem - Tehnične in funkcijske karakteristike za sisteme osebne klica na kraju samem, vključno s preskušalnimi metodami

Electromagnetic compatibility and Radio spectrum Matters (ERM); On-site paging service; Technical and functional characteristics for on-site paging systems, including test methods

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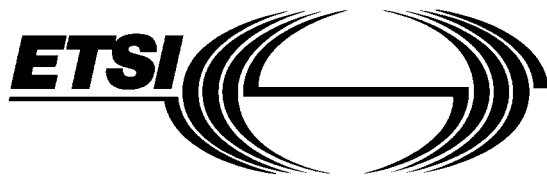
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ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

Internet: secretariat@etsi.fr - <http://www.etsi.fr> - <http://www.etsi.org>

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

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Contents

Foreword	9
1 Scope	11
2 Normative references	11
3 Definitions and abbreviations	11
3.1 Definitions	11
3.2 Abbreviations	12
4 Functional characteristics	12
4.1 On-site paging system description	12
4.2 On-site paging system basic services	12
4.3 Description of additional functional characteristics	13
5 General	14
5.1 Presentation of radio paging equipment for testing purposes	14
5.1.1 Choice of model for type approval	14
5.1.2 Definition of alignment range	14
5.1.3 Definition of the categories of the alignment range (AR1 and AR2)	14
5.1.4 Choice of frequencies	14
5.1.5 Testing of equipment of category AR1	14
5.1.6 Testing of equipment of category AR2	14
5.1.7 Testing of equipment without an external 50 Ω antenna connector	15
5.1.7.1 Equipment with a permanent internal 50 Ω Radio Frequency (RF) connector	15
5.1.7.2 Equipment with a temporary 50 Ω RF connector	15
5.2 Mechanical and electrical design	15
5.3 Marking (equipment identification)	15
5.4 Controls	15
5.5 Transmitter shut-off facility	15
5.6 Receiver mute or squelch circuit	15
5.7 Declarations by the manufacturer	15
5.8 Auxiliary test equipment	16
5.9 Categories of emission	16
5.10 Interpretation of the measurement results	16
6 Test conditions, power sources and ambient temperatures	16
6.1 Normal and extreme test conditions	16
6.2 Normal operational test conditions	16
6.2.1 Normal temperature and humidity	16
6.2.2 Normal test power source	16
6.3 Extreme test conditions	17
6.3.1 Procedure for tests at extreme temperatures	17
6.3.2 Extreme temperature limits	17
6.3.3 Extreme test power source	18
6.3.4 Test power source	18
7 Electrical test conditions	18
7.1 Normal test signals and test modulation	18
7.1.1 Normal test signals for analogue speech	19
7.1.2 Normal test signals for data	19
7.2 Artificial load	19
7.3 Test fixture for transmitters with an integral antenna	19
7.4 Test site and general arrangements for the measurement of radiated fields	20
7.5 Arrangements for test signals applied to the receiver input	20

8	Transmitter requirements	20
8.1	Frequency error	20
8.1.1	Definition	20
8.1.2	Method of measurement	20
8.1.3	Limits	21
8.2	Carrier power	21
8.2.1	Definition	21
8.2.2	Carrier power (conducted)	21
8.2.2.1	Method of measurement	21
8.2.2.2	Limits	22
8.2.3	Effective radiated power	22
8.2.3.1	Method of measurement	22
8.2.3.2	Limits	24
8.3	Adjacent channel power	24
8.3.1	Definition	24
8.3.2	Method of measurement	24
8.3.3	Limits	25
8.4	Frequency deviation	26
8.4.1	Definition	26
8.4.2	Method of measurement	26
8.4.3	Analogue signals within the audio bandwidth	26
8.4.3.1	Method of measurement	26
8.4.3.2	Limits	27
8.4.4	Analogue signals above the audio bandwidth	27
8.4.4.1	Method of measurement	27
8.4.4.2	Limits	27
8.5	Spurious emissions	28
8.5.1	Definition	28
8.5.2	Method of measurement	29
8.5.2.1	Method of measuring the spurious conducted power level	29
8.5.2.2	Method of measuring the effective radiated spurious power level	29
8.5.3	Limits	30
8.6	Transmitter transient behaviour	30
8.6.1	Definition	30
8.6.1.1	Keying criteria when the transmitter output power is switched on	31
8.6.1.2	Keying criteria when the transmitter output power is switched off	31
8.6.2	Method of measurement	32
8.6.3	Limits	33
9	Receiver requirements	33
9.1	Pocket paging receivers	33
9.1.1	Spurious emissions	33
9.1.1.1	Definition	33
9.1.1.2	Method of measurement	33
9.1.1.3	Limits	34
9.2	Base station receivers	34
9.2.1	Measured sensitivity for analogue speech	34
9.2.1.1	Definition	34
9.2.1.2	Method of measurement	34
9.2.1.3	Limits	34
9.2.2	Measured sensitivity for messages	34
9.2.2.1	Definition	34
9.2.2.2	Method of measurement	34
9.2.2.3	Limits	35
9.2.3	Co-channel rejection for analogue speech	35
9.2.3.1	Definition	35
9.2.3.2	Method of measurement	35
9.2.3.3	Limits	35
9.2.4	Co-channel rejection for messages	36
9.2.4.1	Definition	36

	9.2.4.2	Method of measurement.....	36
	9.2.4.3	Limits	36
9.2.5		Adjacent channel selectivity for analogue speech.....	36
	9.2.5.1	Definition.....	36
	9.2.5.2	Method of measurement.....	37
	9.2.5.3	Limits	37
9.2.6		Adjacent channel selectivity for messages.....	37
	9.2.6.1	Definition.....	37
	9.2.6.2	Method of measurement.....	37
	9.2.6.3	Limits	38
9.2.7		Spurious response immunity for analogue speech	38
	9.2.7.1	Definition.....	38
	9.2.7.2	Method of measurement.....	38
	9.2.7.3	Limit	39
9.2.8		Spurious response immunity for messages	39
	9.2.8.1	Definition.....	39
	9.2.8.2	Method of measurement.....	39
	9.2.8.3	Limit	39
9.2.9		Intermodulation immunity for analogue speech	40
	9.2.9.1	Definition.....	40
	9.2.9.2	Method of measurement.....	40
	9.2.9.3	Limit	40
9.2.10		Intermodulation immunity for messages	41
	9.2.10.1	Definition.....	41
	9.2.10.2	Method of measurement.....	41
	9.2.10.3	Limit	42
9.2.11		Blocking immunity or desensitization for analogue speech.....	42
	9.2.11.1	Definition.....	42
	9.2.11.2	Method of measurement.....	42
	9.2.11.3	Limit	42
9.2.12		Blocking immunity or desensitization for messages.....	43
	9.2.12.1	Definition.....	43
	9.2.12.2	Method of measurement.....	43
	9.2.12.3	Limit	43
9.2.13		Spurious emissions	43
	9.2.13.1	Definition.....	43
	9.2.13.2	Method of measurement.....	44
	9.2.13.2.1	Conducted spurious components	44
	9.2.13.2.2	Radiated spurious components	44
	9.2.13.3	Limits	44
10		Inductive loop systems.....	44
10.1		Additional definitions for inductive systems	44
10.2		General	45
	10.2.1	Presentation of inductive loop paging equipment for testing purposes.....	45
	10.2.2	Choice of model for type testing.....	45
	10.2.3	Multi-carrier loop equipment.....	45
	10.2.3.1	Loop receivers	45
	10.2.3.2	Loop transmitters.....	45
	10.2.4	Single (modulated) carrier loop equipment	45
	10.2.4.1	Definition of alignment range.....	45
	10.2.4.2	Definition of the categories of the alignment range (AR1 and AR2).....	45
	10.2.4.3	Choice of frequencies.....	45
	10.2.4.4	Testing of equipment of category AR1	45
	10.2.4.5	Testing of equipment of category AR2	45
10.3		Loop transmitter requirements.....	46
	10.3.1	Transmitter carrier power	46
	10.3.1.1	Definition.....	46
	10.3.1.2	Measuring method.....	46
	10.3.1.3	Limit	46
	10.3.2	Range of operating frequencies	46
	10.3.2.1	Limits	46

	10.3.2.2	Frequency error.....	46
	10.3.2.2.1	Definition	46
	10.3.2.2.2	Measuring method	46
	10.3.2.2.3	Limits	47
	10.3.2.3	Modulation bandwidth	47
	10.3.2.3.1	Definition	47
	10.3.2.3.2	Measuring method	47
	10.3.2.3.3	Limit.....	47
10.3.3		Spurious emissions.....	47
	10.3.3.1	Definition	47
	10.3.3.2	Measuring methods	47
	10.3.3.2.1	Method of measuring the power level ..	47
	10.3.3.2.2	Method of measuring the field strength	48
	10.3.3.2.3	Method of measuring spurious radiation above 25 MHz	48
	10.3.3.3	Limits.....	48
10.4		Receiver requirements	48
	10.4.1	Spurious emissions.....	48
	10.4.1.1	Definition	48
	10.4.1.2	Measuring method	48
	10.4.1.3	Limits.....	49
11		Measurement uncertainty	49
	11.1	Absolute measurement uncertainties: maximum values	49
Annex A (normative):		Radiated measurements.....	50
A.1		Test sites and general arrangements for measurements involving the use of radiated fields	50
	A.1.1	Outdoor test site.....	50
	A.1.1.1	Standard position.....	50
	A.1.2	Test antenna	51
	A.1.3	Substitution antenna.....	51
	A.1.4	Optional additional indoor site	52
A.2		Guidance on the use of radiation test sites.....	52
	A.2.1	Measuring distance	53
	A.2.2	Test antenna	53
	A.2.3	Substitution antenna.....	53
	A.2.4	Artificial antenna.....	53
	A.2.5	Auxiliary cables	53
A.3		Further optional alternative indoor test site using an anechoic chamber	53
	A.3.1	Example of the construction of a shielded anechoic chamber.....	53
	A.3.2	Influence of parasitic reflections in anechoic chambers.....	54
	A.3.3	Calibration of the shielded RF anechoic chamber	54
Annex B (normative):		Support for pocket equipment.....	57
Annex C (normative):		Specification of power measuring receiver	58
C.1		IF filter.....	58
C.2		Attenuation indicator	59
C.3		RMS value indicator.....	59
C.4		Oscillator and amplifier	59
Annex D (normative):		Spurious radiation limits for loop systems	60
Annex E (normative):		Subclauses of this ETS relevant for compliance with the essential requirements of relevant EC Council Directives	61

Annex F (normative):	ERC Decision on the adoption of approval regulations based on this ETS	62
Annex G (informative):	Detailed on-site description	70
G.1	Characteristic features	70
G.2	On-site paging users	71
G.3	Spectrum efficiency	71
Annex H (informative):	Bibliography	72
History.....		73

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Foreword

This second edition European Telecommunication Standard (ETS) has been produced by the EMC and Radio Spectrum Matters (ERM) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 83/189/EEC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

This ETS, together with ETS 300 682, is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility ("the EMC Directive") (89/336/EEC as amended).

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

Annex B provides requirements concerning measuring support for pocket equipment.

Annex C contains specifications for the adjacent channel power measuring receiver.

Annex D is a graphical representation of subclause 10.4.1.3 referring to the limits for spurious radiation from loop receivers.

Annex E contains technical specifications relevant to the EMC Directive.

Annex F contains the ERC Decision which references the technical specifications in this ETS for inclusion in national type approval regulations.

Annex G provides information concerning the on-site paging service.

Annex H contains a bibliography.

This ETS also 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.

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

The conditions for licensing as well as conditions for interfacing to Public Switched Telephone Network (PSTN) are determined by the appropriate authorities.

Transposition dates	
Date of adoption of this ETS:	20 February 1998
Date of latest announcement of this ETS (doa):	30 June 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 December 1998
Date of withdrawal of any conflicting National Standard (dow):	31 December 1998

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1 Scope

This European Telecommunication Standard (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 146 kHz.

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

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

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

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

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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 private 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 purposes of this ETS, the following definitions apply:

base station receiver: Receiver intended for use in a fixed location.

base station transmitter: Transmitter intended for use in a fixed location.

category AR1: See subclause 5.1.3.

category AR2: See subclause 5.1.3.

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

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.

Low Frequency (LF): The frequency range 30 kHz to 300 kHz.

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.

transcoder: A transmitter and encoder combined in a single housing and operated in a fixed location indoors.

Very Low Frequency (VLF): The frequency range 3 kHz to 30 kHz.

3.2 Abbreviations

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

AR	Alignment Range
emf	electromotive force
IF	Intermediate Frequency
LF	Low Frequency
MPFD	Maximum Permissible Frequency Deviation
PBX	Private Branch eXchange
PSTN	Public Switched Telephone Network
RF	Radio Frequency
rms	root-mean-squared
SINAD	(Signal + Noise And Distortion) / (Noise + Distortion) ratio
Tx	Transmitter
VLF	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).

Annex G 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.

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: 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: 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: 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: 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.

speech facility: The mode of operation allowing the transmission of speech messages from the base stations to the paging receivers.

talk-back facility: The mode of operation enabling the transmission of speech messages from the pocket units to the base stations after the reception of a selective call from the base station.

talk-through facility: The application in which a speech signal from a pocket transceiver is relayed by the base station(s) and transmitted to another pocket transceiver of the same system and site.

In order to make maximum use of the allocated radio channels (one outgoing and one return), and to give maximum flexibility to the user, the user may install and use any combination of the features of the system. In addition to normal paging calls this includes:

- call acknowledgement;
- speech;
- talk-back;
- talk-through;
- dial-in;
- dial-out;
- dial-through;
- the use of multi-transmitter systems (working on one frequency);
- the use of diversity (multi-receiver) reception for the base station receiver system;
- the transmission of periodic calls and preambles.