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**Radijska oprema in sistemi (RES) - Standard elektromagnetne združljivosti (EMC) radijske in pomožne opreme (govorne oziroma negovorne) za radiotelefonijo za občane (CB) - 1. del: S kotno modulacijo**

Radio Equipment and Systems (RES); ElectroMagnetic Compatibility (EMC) standard for Citizens Band (CB) radio and ancillary equipment (speech and/or non-speech); Part 1: Angle-modulated

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Citizens' Band (CB) radio and ancillary equipment  
(speech and/or non-speech);  
Part 1: Angle-modulated**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI) in response to European Commission mandate BC-T-353 [2].

This ETS together with ETS 300 135 [1] is intended to become a Harmonized EMC Standard, the reference of which is intended to be published in the Official Journal of the European Commission referencing the EMC Directive, 89/336/EEC [3].

The technical specifications, which are relevant to the EMC Directive are listed in normative annex A.

This ETS is based upon the Generic Standards EN 50081-1 [4], EN 50082-1 [5], and other standards where appropriate, to meet the essential requirements of the Council Directive 89/336/EEC [3].

This ETS consists of 2 parts as follows:

**Part 1: "Angle modulated";**

Part 2: "Double Side Band (DSB) and/or Single Side Band (SSB)".

Transposition dates	
Date of adoption:	7 March 1997
Date of latest announcement of this ETS (doa):	30 June 1997
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 December 1997
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## 1 Scope

This European Telecommunication Standard (ETS) covers the assessment of angle-modulated Citizens' Band (CB) radio and ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

This ETS specifies the applicable EMC tests, the test methods, the limits and the minimum performance criteria for angle-modulated CB Radio equipment (speech and/or non-speech) operating in the frequency range 26-28 MHz, and the associated ancillary equipment.

The environmental classification used in this ETS refers to the environment classification used in the Generic Standards EN 50081-1 [4], EN 50082-1 [5], except for the vehicular environment class which refers to ISO 7637 [14], [15].

The EMC requirements have been selected to ensure an adequate level of compatibility for apparatus at residential, commercial, light industrial and vehicular environments. The levels do not cover extreme cases which may occur in any location but have a low probability of occurrence.

This ETS may not cover those cases where a potential source of interference which is producing individually repeated transient phenomena or a continuous phenomena is permanently present, e.g. a radar or broadcast site in the near vicinity. In such a case it may be necessary to use special protection applied to either the source of interference or the interfered part or both.

Compliance of radio equipment with the requirements of this ETS does not signify compliance with any requirements related to the use of the equipment (i.e. licensing requirements).

Compliance to this ETS does not signify compliance to any safety requirements. However, it is the responsibility of the assessor of the equipment that any observations regarding apparatus becoming dangerous or unsafe as a result of the application of the tests of this ETS, is recorded in the test report.

## 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 relate to the publications 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] ETS 300 135: "Radio Equipment and Systems; Angle-modulated Citizens' band radio equipment (CEPT PR 27 Radio Equipment); Technical characteristics and methods of measurement".
- [2] BC-T-353: "European Commission Standardization Mandate M/237".
- [3] 89/336/EEC: "Council Directive of 3 May 1989 on the approximation of laws of Member States relating to Electromagnetic Compatibility".
- [4] EN 50081-1: "Electromagnetic compatibility - Generic emission standard. Part 1 Residential, commercial and light industry".
- [5] EN 50082-1: "Electromagnetic compatibility - Generic immunity standard. Part 1: Residential, commercial and light industry".
- [6] EN 55022: "Limits and methods of measurement of radio disturbance characteristics of information technology equipment".
- [7] CISPR 16-1: "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus".
- [8] ENV 50140: "Electromagnetic Compatibility - Basic immunity standard - Radiated, radio-frequency electromagnetic field. Immunity test".

- [9] EN 61000-4-2: "Electromagnetic Compatibility (EMC) - Part 4: Testing and measurements techniques - Section 2: Electrostatic discharge immunity test".
- [10] EN 61000-4-4: "Electromagnetic Compatibility (EMC) - Part 4: Testing and measurements techniques - Section 4: Electrical fast transients/burst requirements".
- [11] EN 61000-4-6: "Electromagnetic Compatibility (EMC) - Part 4: Testing and measurements techniques - Section 6: Immunity to conducted disturbances, induced by radio-frequency fields".
- [12] EN 61000-4-11: "Electromagnetic Compatibility (EMC) - Part 4: Testing and measurements techniques - Section 11: Voltage dips, short interruptions and voltage variations immunity tests".
- [13] EN 61000-4-5: "Electromagnetic Compatibility (EMC) - Part 4: Testing and measurements techniques - Section 5: Surge immunity test".
- [14] ISO 7637 (1990): "Road vehicles - Electrical disturbance by conducting and coupling - Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage".
- [15] ISO 7637 (1990): "Road vehicles - Electrical disturbance by conducting and coupling - Part 2: Commercial vehicles with nominal 24 V supply voltage - Electrical transient conduction along supply lines only".

### 3 Definitions, symbols and abbreviations

#### 3.1 Definitions

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

**ancillary equipment:** Equipment (apparatus), used in connection with a receiver, transmitter or transceiver is considered as an ancillary equipment (apparatus) if:

- the equipment is intended for use in conjunction with a receiver, transmitter or transceiver to provide additional operational and/or control features to the radio equipment (e.g. to extend control to another position or location); and
- the equipment cannot be used on a stand alone basis to provide user functions independently of a receiver, transmitter or transceiver; and
- the receiver, transmitter or transceiver to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub unit of the main equipment essential to the main equipment basic functions).

**enclosure port:** The physical boundary of the apparatus onto which an electromagnetic field may radiate or impinge.

**integral antenna equipment:** CB equipment without an accessible external transmission line interface. Integral antenna CB equipment in the context of this ETS should be understood to be low power handheld CB radio equipment which is mainly used for children's toys and similar purposes.

**port:** A particular interface of the specified equipment (apparatus) with the external electromagnetic environment.

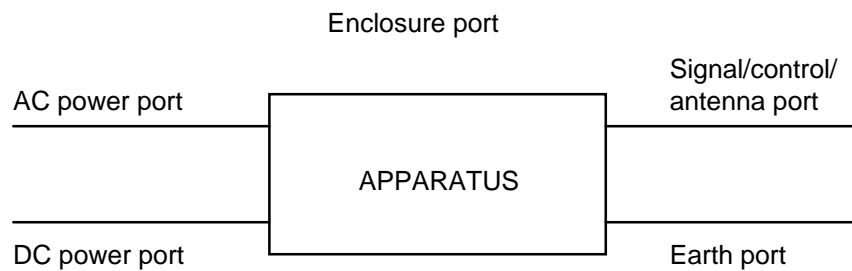


Figure 1: Examples of a port

**radiocommunications equipment:** An item of radio equipment is an apparatus which includes one or more transmitters and/or receivers and/or parts thereof. This type of equipment (apparatus) is used in a fixed, mobile or a portable application.

**switching range:** The switching range is the maximum frequency range over which the equipment can be operated without reprogramming or realignment.

### 3.2 Symbols

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

emf	electromotive force
SINAD	Signal + Noise + Distortion to Noise + Distortion
Tx	Transmit

### 3.3 Abbreviations

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

BER	Bit Error Ratio
CB	Citizens' Band
DSB	Double Side Band
EMC	Electromagnetic Compatibility
ESD	ElectroStatic Discharge
EUT	Equipment Under Test
LISN	Line Impedance Stabilization Network
RF	Radio Frequency
SSB	Single Side Band

## 4 General test conditions

### 4.1 Test conditions

This subclause defines the requirements for the general test configuration and are as follows:

- the equipment shall be tested under conditions which are within the manufacturers declared range of humidity, temperature and supply voltage;
- the test configuration shall be as close to normal intended use as possible;
- integral antenna CB equipment shall be tested in a manner typical of normal intended use;
- if the equipment is part of a system, or can be connected to ancillary equipment, then it shall be acceptable to test the equipment while connected to the minimum configuration of ancillary equipment necessary to exercise the ports;
- ports which in normal operation are connected shall be connected to an ancillary equipment or to a representative piece of cable correctly terminated to simulate the impedance of the ancillary equipment, Radio Frequency (RF) input/output ports shall be correctly terminated;