



SLOVENSKI STANDARD
DSIST ETS 300 454:1998
01-Uj [i gh1998

FUX]g_UcdfYa U]b'g]ghYa J'fF9GL!ü]fc_cdUgcj bYnj c_cj bYdcj YnUj Y!HY b] bY
nbU]bcgh]b'dfYg_i ýUbYa YhcXY

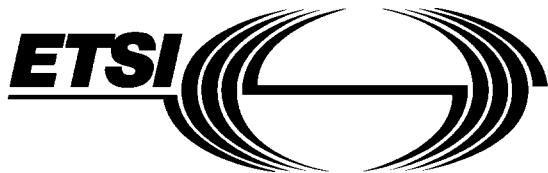
Radio Equipment and Systems (RES); Wide band audio links; Technical characteristics
and test methods

Ta slovenski standard je istoveten z: **ETS 300 454 Edition 1**

ICS:

33.060.99	Druga oprema za radijske komunikacije	Other equipment for radiocommunications
-----------	---------------------------------------	---

DSIST ETS 300 454:1998 **en**



**EUROPEAN
TELECOMMUNICATION
STANDARD**

ETS 300 454

December 1995

Source: ETSI TC-RES

Reference: DE/RES-08-0304

ICS: 33.020,33.060.20

Key words: audio, data, radio mic, testing

**Radio Equipment and Systems (RES);
Wide band audio links;
Technical characteristics and test methods**

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

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

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

Contents

Foreword	7
Introduction.....	7
1 Scope	9
2 Normative references.....	9
3 Definitions, symbols and abbreviations	10
3.1 Definitions	10
3.2 Symbols	10
3.3 Abbreviations	11
4 Functional characteristics.....	11
4.1 Wide band audio link descriptions	11
5 General.....	11
5.1 Presentation of equipment for testing purposes	11
5.1.1 Choice of model for type testing.....	12
5.1.2 Definitions of alignment and switching ranges	12
5.1.3 Definition of the categories of the alignment range (AR1 and AR2)	13
5.1.4 Choice of frequencies.....	13
5.1.5 Testing of single channel equipment of category AR1	13
5.1.6 Testing of single channel equipment of category AR2.....	13
5.1.7 Testing of two channel equipment of category AR1	13
5.1.8 Testing of two channel equipment of category AR2	13
5.1.9 Testing of multichannel equipment (more than two channels) of category AR1	14
5.1.10 Testing of multichannel equipment (more than two channels) of category AR2 where the switching range is less than the alignment range.....	14
5.1.11 Testing of multichannel equipment (more than two channels) of category AR2 where the switching range is equal to the alignment range	14
5.1.12 Testing of equipment without a permanent external RF port	14
5.1.12.1 Equipment with a permanent internal RF port.....	14
5.1.12.2 Equipment with a temporary RF port.....	15
5.2 Mechanical and electrical design.....	15
5.2.1 General.....	15
5.2.2 Limiting threshold	15
5.2.3 Controls	15
5.2.4 Integral antenna	15
5.2.5 Marking (equipment identification)	16
5.3 Interpretation of the measurement results	16
6 Test conditions, power sources and ambient conditions.....	16
6.1 Normal and extreme test conditions	16
6.2 Test power source	16
6.3 Normal test conditions	17
6.3.1 Normal temperature and humidity	17
6.3.2 Normal test power source voltage.....	17
6.3.2.1 Mains voltage.....	17
6.3.2.2 Nickel-Cadmium cells	17
6.3.2.3 Other power sources	17
6.4 Extreme Test Conditions	17
6.4.1 Extreme temperatures.....	17
6.4.1.1 Procedures for tests at extreme temperatures	17
6.4.2 Extreme test power source voltages	18
6.4.2.1 Mains voltage.....	18

6.4.2.2	Rechargeable battery power sources	18
6.4.2.3	Power sources using other types of batteries	18
6.4.2.4	Other power sources.....	18
7	General conditions	18
7.1	Normal test modulation	18
7.2	Artificial antenna.....	19
7.3	Test fixture	20
7.4	Test site and general arrangements for radiated measurements	20
7.5	Modes of operation of the transmitter	20
7.6	Arrangement for test signals at the input of the transmitter	20
7.7	Arrangements for test signals applied to the receiver via a test fixture or a test antenna.	20
8	Methods of measurement and limits for transmitter parameters.....	21
8.1	Frequency error.....	21
8.1.1	Definition.....	21
8.1.2	Method of measurement.....	21
8.1.3	Limit	21
8.2	Carrier power.....	21
8.2.1	Definition.....	21
8.2.2	Method of measurement for equipment without integral antenna	21
8.2.3	Method of measurement for equipment with integral antenna	22
8.2.3.1	Method of measurement under normal test conditions.....	22
8.2.3.2	Method of measurement under extreme test conditions....	22
8.2.4	Limit	22
8.3	Channel bandwidth.....	23
8.3.1	Definition.....	23
8.3.2	Measurement of Necessary Bandwidth (BN).....	23
8.3.3	Limits	24
8.4	Spurious emissions	24
8.4.1	Definitions	24
8.4.2	Method of measuring the effective radiated power.....	24
8.4.3	Limits	25
8.4.4	Measuring receiver	25
8.5	Transient frequency behaviour of the transmitter.....	25
8.5.1	Definitions	25
8.5.2	Method of measurement.....	26
8.5.3	Method of measurement for frequency changing	27
8.5.4	Limits	27
9	Receiver.....	27
9.1	Spurious emissions	27
9.1.1	Definitions	27
9.1.2	Method of measuring the power level in a specified load.....	28
9.1.3	Method of measuring the effective radiated power of the enclosure	28
9.1.4	Method of measuring the effective radiated power.....	29
9.2	Limits	29
10	Measurement uncertainty	29
Annex A (normative): Radiated measurement		30
A.1	Test sites and general arrangements for measurements involving the use of radiated fields	30
A.1.1	Outdoor test site	30
A.1.1.1	Test support for body worn equipment	30
A.1.1.2	Standard position.....	31
A.1.2	Test antenna	31
A.1.3	Substitution antenna.....	31
A.1.4	Optional additional indoor site	32
A.2	Guidance on the use of radiation test sites	32
A.2.1	Measuring distance	33
A.2.2	Test antenna	33

A.2.3	Substitution antenna	33
A.2.4	Artificial antenna	33
A.2.5	Auxiliary cables	33
A.3	Further optional alternative indoor test site using an anechoic chamber	33
A.3.1	Example of the construction of a shielded anechoic chamber	33
A.3.2	Influence of parasitic reflections in anechoic chambers	34
A.3.3	Calibration of the shielded anechoic chamber	35
Annex B (normative): Measurement of Necessary Bandwidth (BN)		37
Annex C (informative): Graphic representation of the selection of equipment and frequencies for testing of single and multi-frequency equipment		38
History.....		40

Page 6
ETS 300 454: December 1995

Blank page