

9`Y_fca U[bYfbUnXfi y`^j cgh]b`nUXYj Yj`nj Yn]`nfUX]`g_`ja `gdY_fca `fØFAŁ!
I`hfUj]gc_cZj`j Yb b]`fl <: Ł_ca i b]_UW]`g_]`g]ghYa]]b`cdfYa UnUi dcfUwc`bU
_fcj i `d`cj]`!`%`XY. `HM b] bY`UfU`hf]gh]_Y]b`a Yf]`bY`a YrcXY

Electromagnetic compatibility and Radio spectrum Matters (ERM) - Ultra-High Frequency (UHF) on-board vessels communications systems and equipment - Part 1: Technical characteristics and methods of measurement

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 720-1 V1.3.2:2008](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

[https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

[4cb5464534af/sist-en-300-720-1-v1-3-2-2008](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

Ta slovenski standard je istoveten z: EN 300 720-1 Version 1.3.2

ICS:

33.060.99	Druga oprema za radijske komunikacije	Other equipment for radiocommunications
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general
47.020.70	Navigacijska in krmilna oprema	Navigation and control equipment

SIST EN 300 720-1 V1.3.2:2008

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 720-1 V1.3.2:2008

<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008>

ETSI EN 300 720-1 V1.3.2 (2007-10)

European Standard (Telecommunications series)

**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
Ultra-High Frequency (UHF) on-board vessels
communications systems and equipment;
Part 1: Technical characteristics and
methods of measurement**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 720-1 V1.3.2:2008](https://standards.iteh.ai/catalog/standards/sist/86ab91bf3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

<https://standards.iteh.ai/catalog/standards/sist/86ab91bf3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008>



Reference

REN/ERM-TG26-078-1

Keywords

maritime, radio, UHF**ETSI**

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

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

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 720-1 V1.3.2:2008<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb546453478/sist-en-300-720-1-v1-3-2-2008>
Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2007.
All rights reserved.

DECT™, **PLUGTESTS™** and **UMTS™** are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON™ and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights	7
Foreword.....	7
1 Scope	8
2 References	8
3 Definitions, symbols and abbreviations	8
3.1 Definitions	8
3.2 Symbols.....	8
3.3 Abbreviations	9
4 General requirements	9
4.1 Construction	9
4.2 Frequencies.....	9
4.3 Controls	10
4.4 Switching time.....	10
4.5 Safety precautions	10
4.6 Class of emission and modulation characteristics	11
4.7 Batteries for portable equipment	11
4.8 Loudspeaker and microphone.....	11
4.9 Labelling.....	11
4.10 Equipment documentation.....	11
5 Test conditions, power sources and ambient temperatures	11
5.1 Normal end extreme test conditions	11
5.2 Test power source.....	11
5.3 Normal test conditions.....	12
5.3.1 Normal temperature and humidity	12
5.3.2 Normal test voltage.....	12
5.3.2.1 Battery power source.....	12
5.3.2.2 Other power sources.....	12
5.4 Extreme test conditions	12
5.4.1 Extreme temperatures	12
5.4.1.1 Upper extreme temperature.....	12
5.4.1.2 Lower extreme temperature	12
5.4.2 Extreme test power supply values.....	12
5.4.2.1 Upper extreme test voltage - Portable equipment	12
5.4.2.2 Lower extreme test voltage - Portable equipment	12
5.4.2.3 Extreme test voltages - Other equipment	13
5.5 Procedure for tests at extreme temperatures.....	13
6 General conditions of measurement	13
6.1 Test connections	13
6.2 Arrangements for test signals	13
6.2.1 Test signals applied to the transmitter input	13
6.2.2 Test signals applied to the antenna terminal	14
6.3 Receiver mute or squelch facility	14
6.4 Normal test modulation	14
6.5 Artificial antenna.....	14
6.6 Test channels	14
6.7 Measurement uncertainty and interpretation of the measuring results	15
6.7.1 Measurement uncertainty.....	15
6.7.2 Interpretation of the measurement results.....	15
7 Environmental tests	16
7.1 Procedure.....	16
7.2 Performance check	16
7.3 Drop test on to a hard surface - Portable equipment	16

7.3.1	Definition.....	16
7.3.2	Method of measurement	17
7.3.3	Requirement.....	17
7.4	Temperature tests	17
7.4.1	General.....	17
7.4.2	Dry heat	17
7.4.2.1	Method of measurement.....	17
7.4.2.2	Requirement	17
7.4.3	Damp heat.....	18
7.4.3.1	Method of measurement.....	18
7.4.3.2	Requirement	18
8	Transmitter	18
8.1	Frequency error	18
8.1.1	Definition.....	18
8.1.2	Method of measurement	18
8.1.3	Limits.....	18
8.2	Maximum effective radiated power.....	18
8.2.1	Definition.....	18
8.2.2	Method of measurement	19
8.2.3	Limit	19
8.3	Frequency deviation	19
8.3.1	Definition.....	19
8.3.2	Maximum frequency deviation.....	20
8.3.2.1	Method of measurement.....	20
8.3.2.2	Limit.....	20
8.3.3	Frequency deviation at modulation frequencies above 3 kHz.....	20
8.3.3.1	Method of measurement.....	20
8.3.3.2	Limits.....	20
8.4	Limitation characteristics of the modulator.....	21
8.4.1	Definition.....	21
8.4.2	Method of measurement	21
8.4.3	Limit	21
8.5	Sensitivity of the modulator, including microphone (except for repeater equipment).....	22
8.5.1	Definition.....	22
8.5.2	Method of measurement	22
8.5.3	Limit	22
8.6	Audio frequency response	22
8.6.1	Definition.....	22
8.6.2	Method of measurement	22
8.6.3	Limit	23
8.7	Audio frequency harmonic distortion of the emission.....	23
8.7.1	Definition.....	23
8.7.2	Method of measurement	24
8.7.3	Limit	24
8.8	Adjacent channel power	24
8.8.1	Definition.....	24
8.8.2	Method of measurement	24
8.8.3	Limit	25
8.9	Residual modulation of the transmitter	25
8.9.1	Definition.....	25
8.9.2	Method of measurement	25
8.9.3	Limit	25
8.10	Transient frequency behaviour of the transmitter.....	25
8.10.1	Definition.....	25
8.10.2	Method of measurement	26
8.10.3	Limits.....	27
8.11	Conducted spurious emissions conveyed to the antenna.....	29
8.11.1	Definition.....	29
8.11.2	Method of measurement	29
8.11.3	Limit	29
8.12	Cabinet radiation and conducted spurious emissions other than those conveyed to the antenna	29

8.12.1	Definitions	29
8.12.2	Method of measurement	29
8.12.3	Limits.....	30
9	Receiver.....	31
9.1	Harmonic distortion and rated audio frequency output power	31
9.1.1	Definition.....	31
9.1.2	Methods of measurement.....	31
9.1.3	Limits.....	31
9.2	Audio frequency response	31
9.2.1	Definition.....	31
9.2.2	Method of measurement	32
9.2.3	Limits.....	32
9.3	Maximum usable sensitivity.....	33
9.3.1	Definition.....	33
9.3.2	Method of measurement	34
9.3.3	Limits.....	34
9.4	Co-channel rejection.....	34
9.4.1	Definition.....	34
9.4.2	Method of measurement	34
9.4.3	Limit	34
9.5	Adjacent channel selectivity.....	35
9.5.1	Definition.....	35
9.5.2	Method of measurement	35
9.5.3	Limits.....	35
9.6	Spurious response rejection.....	35
9.6.1	Definition.....	35
9.6.2	Method of measurement	35
9.6.3	Limit	36
9.7	Intermodulation response	36
9.7.1	Definition.....	36
9.7.2	Method of measurement	36
9.7.3	Limit	36
9.8	Blocking or desensitization.....	36
9.8.1	Definition.....	36
9.8.2	Method of measurement	37
9.8.3	Limit	37
9.9	Conducted spurious emissions conveyed to the antenna.....	37
9.9.1	Definition.....	37
9.9.2	Method of measurement	37
9.9.3	Limit	37
9.10	Radiated spurious emissions.....	37
9.10.1	Definition.....	37
9.10.2	Method of measurements.....	38
9.10.3	Limit	38
Annex A (normative): Measuring receiver for adjacent channel power measurement.....		39
A.1	Power measuring receiver specification.....	39
A.1.1	IF filter	39
A.1.2	Attenuation indicator.....	40
A.1.3	RMS value indicator.....	40
A.1.4	Oscillator and amplifier.....	40
Annex B (normative): Radiated measurement.....		41
B.1	Test sites and general arrangements for measurements involving the use of radiated fields.....	41
B.1.1	Anechoic chamber.....	41
B.1.2	Anechoic chamber with a ground plane	42
B.1.3	OATS	43
B.1.4	Test antenna.....	44
B.1.5	Substitution antenna	44
B.1.6	Measuring antenna	45

B.2	Guidance on the use of radiation test sites	45
B.2.1	Verification of the test site	45
B.2.2	Preparation of the EUT.....	45
B.2.3	Power supplies to the EUT	45
B.2.4	Volume control setting for analogue speech tests	45
B.2.5	Range length.....	46
B.2.6	Site preparation	46
Annex C (informative):	Bibliography.....	48
History		49

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 300 720-1 V1.3.2:2008](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 1 of a multi-part deliverable covering Ultra-High Frequency (UHF) on-board vessels communications systems and equipment, as identified below:

Part 1: "Technical characteristics and methods of measurement";

Part 2: "Harmonized EN under article 3.2 of the R&TTE Directive".

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Date of adoption of this EN:	28 September 2007
Date of latest announcement of this EN (doa):	31 December 2007
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2008
Date of withdrawal of any conflicting National Standard (dow):	30 June 2008

1 Scope

The present document specifies the minimum technical characteristics required for UHF on board vessels radio equipment and systems operating on frequencies allocated to the maritime mobile services by the ITU Radio Regulations [6].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

- [1] ITU-R Recommendation M.1174-2: "Technical characteristics of equipment used for on-board vessel communications in the bands between 450 and 470 MHz".
- [2] ITU-T Recommendation O.41 (1994): "Psophometer for use on telephone-type circuits".
- [3] ISO 694: "Ships and marine technology - Positioning of magnetic compasses in ships".
<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-54534e6e9130/iso-694-2008>
- [4] ANSI C63.5 (2006): "American National Standard for Electromagnetic Compatibility - Radiated Emission Measurements in Electromagnetic Interference (EMI) Control - Calibration of Antennas (9 kHz to 40 GHz)".
- [5] ITU-R Recommendation SM.332-4: "Selectivity of receivers".
- [6] ITU Radio Regulations (2004).
-

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

integral antenna: antenna designed as a fixed part of the equipment, without the use of an external connector and as such which can not be disconnected from the equipment by the user

modulation index: ratio between the frequency deviation and the modulation frequency

3.2 Symbols

For the purposes of the present document, the following symbols apply:

dBA acoustic level in dB relative to 2×10^{-5} Pa

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ad	amplitude difference
CSP	Channel Spacing Parameters
emf	electro-motive force
EUT	Equipment Under Test
fd	frequency difference
OATS	Open Area Test Site
PEP	Peak Envelope Power
RF	Radio Frequency
rms	root mean square
SINAD	signal + noise + distortion / noise + distortion
UHF	Ultra High Frequency
VSWR	Voltage Standing Wave Ratio

4 General requirements

4.1 Construction

The mechanical and electrical construction and finish of the equipment shall conform in all respects to good engineering practice and the equipment shall be suitable for use on board vessels.

For portable equipment the colour shall be neither orange nor yellow.

iTech STANDARD PREVIEW
(standards.iteh.ai)

4.2 Frequencies

The equipment shall operate either on single frequency or two frequency simplex channels on those frequencies specified in ITU-R Recommendation M.1742 [1].

SIST EN 300 720-1 V1.3.2:2008

http://standards.iteh.ai/catalog/standards/sist-en-300-720-1-v1-3-2-2008

Single frequency simplex channels shall be in accordance with table 1.

Additional channels for 12,5 kHz equipment shall be in accordance with table 2.

Two frequency simplex channels for use with a repeater shall be in accordance with table 3.

Table 1: Single frequency simplex channels (25 kHz or 12,5 kHz use)

Channel designator	CSP	Frequency
Channel A	25 kHz	467,525 MHz
Channel A*	12,5 kHz	
Channel B	25 kHz	467,550 MHz
Channel B*	12,5 kHz	
Channel C	25 kHz	467,575 MHz
Channel C*	12,5 kHz	
Channel D	25 kHz	457,525 MHz
Channel D*	12,5 kHz	
Channel E	25 kHz	457,550 MHz
Channel E*	12,5 kHz	
Channel F	25 kHz	457,575 MHz
Channel F*	12,5 kHz	

Table 2: Additional channels for 12,5 kHz equipment

Channel designator	CSP	Frequency
Channel M*	12,5 kHz	467,5375 MHz
Channel N*	12,5 kHz	467,5625 MHz
Channel O*	12,5 kHz	457,5375 MHz
Channel P*	12,5 kHz	457,5625 MHz

Table 3: Two-frequency simplex channels for use with repeater only

Channel designator	CSP	Repeater Rx frequency	Repeater Tx frequency
Channel G	25 kHz	467,525 MHz	457,525 MHz
Channel G*	12,5 kHz		
Channel H	25 kHz	467,550 MHz	457,550 MHz
Channel H*	12,5 kHz		
Channel J	25 kHz	467,575 MHz	457,575 MHz
Channel J*	12,5 kHz		
Channel K*	12,5 kHz	467,5375 MHz	457,5375 MHz
Channel L*	12,5 kHz	467,5625 MHz	457,5625 MHz

Designators for 12,5 kHz channels (with the *) means that the equipment shall show that the operation is 12,5 kHz by visual or other means.

Independent selection of transmitting and receiving frequencies shall not be possible.

The equipment shall be fitted with at least one single-frequency simplex channel, the frequency of which shall be 457,525 MHz.

It shall not be possible to transmit during channel-switching operations.

4.3 Controls

SIST EN 300 720-1 V1.3.2:2008

<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008>

The equipment shall have the following controls:

- a channel selector which shall indicate the designator of the channel to which the equipment is set;
- on/off switch for the equipment with visual indication that the equipment is switched on;
- a manual non-locking, push-to-talk switch to operate the transmitter (except for repeater equipment);
- an audio-frequency power volume control (except for repeater equipment).

The user shall not have access to any control which, if wrongly set, might impair the technical characteristics of the equipment.

4.4 Switching time

The channel switching arrangements shall be such that the time necessary to change over from using one of the channels to using any other channel does not exceed 5 seconds.

The time necessary to change over from transmission to reception and vice versa, shall not exceed 0,3 seconds.

4.5 Safety precautions

Provision shall be made for protecting equipment from the effects of excessive current or voltage. Means shall be incorporated to prevent reversal of polarity of the battery power supply.

Equipment with an antenna socket shall not be damaged by the effect of open-circuit or short-circuit of the antenna socket for a period of at least 5 minutes.

The manufacturer shall declare the compass safe distance according to ISO 694 [3], Method B.

4.6 Class of emission and modulation characteristics

The equipment shall use phase modulation, G3E (frequency modulation with a pre-emphasis of 6 dB/octave).

The equipment shall be designed to operate with a channel spacing of 25 kHz or 12,5 kHz or both.

4.7 Batteries for portable equipment

The battery may be an integral part of the equipment.

Primary and/or secondary batteries may be used.

Provisions shall be made for replacing the battery easily.

If the equipment is fitted with secondary batteries, a suitable battery charger shall be recommended by the manufacturer.

4.8 Loudspeaker and microphone

The equipment shall be provided with a microphone and a loudspeaker which may be combined (except for repeater equipment).

In the transmit condition the output of the receiver shall be muted (except for repeater equipment).

4.9 Labelling (standards.iteh.ai)

All controls shall be clearly labelled. The labelling shall include:

- the name of the manufacturer and his trademark;
- the type number and serial number of the equipment; and
- the compass safe distance.

4.10 Equipment documentation

For the purpose of conformance testing in accordance with the present document, adequate technical and operational documentation shall be supplied with the equipment.

5 Test conditions, power sources and ambient temperatures

5.1 Normal and extreme test conditions

Tests shall be made under normal test conditions and also, where stated, under extreme test conditions.

5.2 Test power source

Unless otherwise stated, the battery of the equipment shall be replaced by a test power source capable of producing normal and extreme test voltages as specified in clauses 5.3.2 and 5.4.2.

The voltage of the power source shall be measured at the input terminal of the equipment.

During testing, the power source voltage shall be maintained within a tolerance of ± 3 % relative to the voltage level at the beginning of each test.

5.3 Normal test conditions

5.3.1 Normal temperature and humidity

The normal temperature and humidity conditions for tests shall be a combination of temperature and humidity within the following limits:

- temperature: +15°C to +35°C;
- relative humidity: 20 % to 75 %.

5.3.2 Normal test voltage

5.3.2.1 Battery power source

Where the equipment is designed to operate from a battery, the normal test voltage shall be the nominal voltage of the battery.

5.3.2.2 Other power sources

For operation from other power sources the normal test voltage shall be that declared by the manufacturer.

5.4 Extreme test conditions (standards.iteh.ai)

5.4.1 Extreme temperatures

<https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008>

5.4.1.1 Upper extreme temperature

Tests at the upper extreme temperature shall be made at +55°C.

5.4.1.2 Lower extreme temperature

Tests at the lower extreme temperature shall be made at -20°C.

5.4.2 Extreme test power supply values

5.4.2.1 Upper extreme test voltage - Portable equipment

The upper extreme test voltage shall be declared by the manufacturer and shall not be lower than the following:

- when using primary batteries, the voltage corresponding to the voltage that a fresh battery gives at the upper extreme temperature when loaded with a load equal to that of the equipment in the muted receive condition;
- when using secondary batteries, the voltage corresponding to the voltage that a fully charged battery gives at the upper extreme temperature when loaded with a load equal to that of the equipment in the muted receive condition.

5.4.2.2 Lower extreme test voltage - Portable equipment

The lower extreme test voltage shall be declared by the manufacturer and shall not be higher than the following:

- when using primary batteries, 0,85 times the voltage that a fresh battery gives at the lower extreme temperature when loaded with a load equal to that of the equipment in the muted receive condition;

- when using secondary batteries, 0,85 times the voltage that a fully charged battery gives at the lower extreme temperature when loaded with a load equal to that of the equipment in the muted receive condition.

5.4.2.3 Extreme test voltages - Other equipment

For operation from other sources the extreme test voltages shall be those declared by the manufacturer.

5.5 Procedure for tests at extreme temperatures

The equipment shall be placed in the test chamber at normal temperature. The maximum rate of rising or reducing the temperature of the chamber shall be 1°C/minute. The equipment shall be switched off during the temperature-stabilizing periods.

Before conducting tests at extreme temperatures, the equipment in the test chamber shall have reached thermal equilibrium and be subjected to the extreme temperature for a period of 10 hours to 16 hours.

For tests at the lower extreme temperature, the equipment shall then be switched on to the standby or receive condition for one minute, after which the relevant tests shall be performed.

For tests at the higher extreme temperature, the equipment shall then be switched on in the high power transmit condition for 5 minutes followed by 5 minutes in the receive condition, after which the relevant tests shall be performed.

The temperature of the chamber shall be maintained at the extreme temperatures for the whole duration of the performance tests.

At the end of the test, and with the equipment still in the chamber, the chamber shall be brought to room temperature in not less than one hour. The equipment shall then be exposed to normal room temperature and humidity for not less than three hours or until moisture has dispersed, whichever is the longer, before the next test is carried out. Alternatively, observing the same precautions, the equipment may be returned directly to the conditions required for the start of the next tests.

SIST EN 300 720-1 V1.3.2:2008

[https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

[4cb5464534af/sist-en-300-720-1-v1-3-2-2008](https://standards.iteh.ai/catalog/standards/sist/86ab91bf-3925-41fe-8450-4cb5464534af/sist-en-300-720-1-v1-3-2-2008)

6 General conditions of measurement

6.1 Test connections

For the purpose of testing, suitable connections to the following test points shall be made available:

- the antenna terminal for 50 Ω connection (for equipment without an external antenna connector a permanent internal or a temporary internal 50 Ω RF connector which allows access to the transmitter output and the receiver input shall be available);
- the transmitter audio input(s);
- the receiver audio output(s);
- the push-to-talk switch;
- the battery terminals for test power source connections.

6.2 Arrangements for test signals

6.2.1 Test signals applied to the transmitter input

For the purpose of tests, the transmitter internal microphone shall be disconnected and an audio frequency signal generator shall be applied to the transmitter audio input terminals.