

Final draft **ETSI EN 302 567** V2.2.1 (2021-05)



**Multiple-Gigabit/s radio equipment
operating in the 60 GHz band;
Harmonised Standard for access to radio spectrum**

[ETSI EN 302 567 V2.2.1 \(2021-05\)
https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05](https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05)

ReferenceREN/BRAN-230018

Keywordsaccess, broadband, LAN, radio, SRD, testing

ETSI650 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 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

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

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

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

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2021.
All rights reserved.

Contents

Intellectual Property Rights	6
Foreword.....	6
Modal verbs terminology.....	7
Introduction	7
1 Scope	8
2 References	8
2.1 Normative references	8
2.2 Informative references.....	8
3 Definition of terms, symbols and abbreviations.....	9
3.1 Terms.....	9
3.2 Symbols.....	10
3.3 Abbreviations	10
4 Technical requirements specifications	11
4.1 Environmental profile.....	11
4.2 Conformance requirements	11
4.2.1 Spectral power density.....	11
4.2.1.0 Applicability.....	11
4.2.1.1 Definition	11
4.2.1.2 Limit.....	11
4.2.1.3 Conformance.....	11
4.2.2 RF output power	11
4.2.2.0 Applicability.....	11
4.2.2.1 Definition	11
4.2.2.2 Limit.....	11
4.2.2.3 Conformance.....	12
4.2.3 Transmitter unwanted emissions in the spurious domain	12
4.2.3.0 Applicability.....	12
4.2.3.1 Definition	12
4.2.3.2 Limit.....	12
4.2.3.3 Conformance.....	12
4.2.4 Receiver unwanted emissions	13
4.2.4.0 Applicability.....	13
4.2.4.1 Definition	13
4.2.4.2 Limit.....	13
4.2.4.3 Conformance.....	13
4.2.5 Adaptivity (medium access protocol)	13
4.2.5.1 Applicability.....	13
4.2.5.2 Definition	13
4.2.5.3 Requirement	13
4.2.5.4 Conformance.....	14
4.2.6 Short Control Signalling Transmissions	14
4.2.6.1 Applicability.....	14
4.2.6.2 Definition	14
4.2.6.3 Limits	14
4.2.6.4 Conformance.....	14
4.2.7 Receiver Adjacent Channel Rejection	14
4.2.7.1 Applicability.....	14
4.2.7.2 Definition	15
4.2.7.3 Performance Criteria	15
4.2.7.4 Limits	15
4.2.7.5 Conformance.....	15
4.2.8 Transmitter unwanted emissions in the out-of-band domain	15
4.2.8.0 Applicability.....	15
4.2.8.1 Definition	15

4.2.8.2	Limit.....	15
4.2.8.3	Conformance.....	16
4.2.9	Void.....	16
4.2.10	Occupied Channel Bandwidth.....	16
4.2.10.1	Applicability.....	16
4.2.10.2	Definition.....	16
4.2.10.3	Requirements.....	16
4.2.10.4	Conformance.....	16
4.2.11	Receiver Sensitivity level.....	17
4.2.11.1	Applicability.....	17
4.2.11.2	Definition.....	17
4.2.11.3	Limits.....	17
4.2.11.4	Conformance.....	17
5	Testing for compliance with technical requirements.....	17
5.1	Environmental conditions for testing.....	17
5.1.1	Introduction.....	17
5.1.2	Normal test conditions.....	17
5.1.2.1	Normal temperature and humidity.....	17
5.1.2.2	Normal power source.....	17
5.1.3	Extreme test conditions.....	18
5.2	Void.....	18
5.3	Test procedure for the essential radio test suites.....	18
5.3.0	General.....	18
5.3.1	Product Information.....	18
5.3.2	Test modulation, frequency and configuration.....	18
5.3.3	Spectral power density.....	19
5.3.3.1	Test conditions.....	19
5.3.3.2	Test method.....	19
5.3.4	RF output power.....	20
5.3.4.1	Test conditions.....	20
5.3.4.2	Test method.....	20
5.3.5	Transmitter unwanted emissions in the spurious domain.....	21
5.3.5.0	Test conditions.....	21
5.3.5.1	Pre-scan.....	21
5.3.5.2	Identified emissions.....	22
5.3.6	Receiver unwanted emissions.....	23
5.3.6.0	Test conditions.....	23
5.3.6.1	Pre-scan.....	23
5.3.6.2	Identified emissions.....	23
5.3.7	Receiver Adjacent Channel Rejection.....	24
5.3.7.1	Test conditions.....	24
5.3.7.2	Test Method.....	24
5.3.8	Adaptivity (medium access protocol).....	25
5.3.8.1	Test conditions.....	25
5.3.8.2	Test method.....	25
5.3.8.3	Generic test procedure for measuring channel/frequency usage.....	27
5.3.9	Transmitter unwanted emissions in the out-of-band domain.....	28
5.3.9.1	Test conditions.....	28
5.3.9.2	Test method.....	28
5.3.10	Occupied Channel Bandwidth.....	29
5.3.10.1	Test conditions.....	29
5.3.10.2	Test method.....	29
5.3.11	Receiver sensitivity level.....	29
5.3.11.1	Test conditions.....	29
5.3.11.2	Test method.....	29
Annex A (informative):	Relationship between the present document and the essential requirements of Directive 2014/53/EU.....	31
Annex B (informative):	Maximum Measurement Uncertainty.....	33

Annex C (normative):	Test sites and arrangements for radiated measurements.....	34
C.1	Test sites	34
C.1.1	Open air test sites	34
C.1.2	Anechoic chamber	35
C.1.2.1	General.....	35
C.1.2.2	Description.....	35
C.1.2.3	Influence of parasitic reflections.....	35
C.1.2.4	Calibration and mode of use	35
C.2	Test antenna.....	37
C.3	Substitution antenna	37
Annex D (normative):	General description of measurement	38
D.1	Radiated measurements.....	38
D.2	Substitution measurement	39
Annex E (informative):	Bibliography.....	40
Annex F (informative):	Change History	41
History		42

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ETSI EN 302 567 V2.2.1 \(2021-05\)](https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05)

<https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05>

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are 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 (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, 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.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

ITh STANDARD PREVIEW
(standards.iteh.ai)

Foreword

ETSI EN 302 567 V2.2.1 (2021-05)

This final draft Harmonised European Standard (EN) has been produced by ETSI Technical Committee Broadband Radio Access Networks (BRAN), and is now submitted for the Vote phase of the ETSI standards EN Approval Procedure.

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.2] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.6].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and "must not" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

60 GHz radio equipment are capable of operating at data rates of multiple-gigabit per second.

The spectrum usage conditions for this equipment are set in Commission Decision 2013/752/EU [i.4] and Commission Decision 2019/1345/EU [i.7] amending Commission Decision 2006/771/EC of 9 November 2006 [i.5] and ERC Recommendation 70-03 [i.3], annex 3.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ETSI EN 302 567 V2.2.1 \(2021-05\)](#)

<https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05>

1 Scope

The present document specifies technical characteristics and methods of measurements for radio equipment with integral antennas operating indoor or outdoor at data rates of multiple-gigabit per second in the 60 GHz frequency range.

These radio equipment operate with very wideband communications using a variety of directional medium and high gain antennas to enable a high degree of spectrum reuse, and may use a flexible bandwidth scheme under which they normally operate in a wideband mode, and periodically reduce their bandwidth (e.g. for antenna training and other activities).

The technical characteristics of applications using these radio equipment are further described in ETSI TR 102 555 [i.1].

Equipment in this frequency range intended for outdoor Fixed Local Area Network Extension (FLANE) or Fixed Point-to-Point applications are not in the scope of the present document.

These radio equipment types are capable of operating in all or any part of the frequency bands given in table 1.

Table 1: Radiocommunications service frequency band

	Radiocommunications service frequency band
Transmit	57 GHz to 71 GHz
Receive	57 GHz to 71 GHz

NOTE: The relationship between the present document and essential requirements of article 3.2 of Directive 2014/53/EU [i.6] is given in annex A.

ITeH STANDARD PREVIEW

(standards.iteh.ai)

2 References

ETSI EN 302 567 V2.2.1 (2021-05)

<https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71c88c654c/etsi-en-302-567-v2-2-1-2021-05>

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TR 102 555: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Technical characteristics of multiple gigabit wireless systems in the 60 GHz range System Reference Document".
- [i.2] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.
- [i.3] ERC Recommendation 70-03 (Tromsø 1997 and subsequent amendments): "Related to the Use of Short Range Devices (SRD)".
- [i.4] Commission Implementing Decision 2013/752/EU of 11 December 2013 amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices and repealing Decision 2005/928/EC (notified under document C(2013) 8776) Text with EEA relevance.
- [i.5] Commission Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices.
- [i.6] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.
- [i.7] Commission Implementing Decision (EU) 2019/1345 of 2 August 2019 amending Decision 2006/771/EC updating harmonised technical conditions in the area of radio spectrum use for short-range devices (notified under document C(2019) 5660) Text with EEA relevance.
- [i.8] IEEE 802.11-2020™: "Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications".
- [i.9] ITU-R Radio Regulations.
- [i.10] ERC Recommendation 74-01 (1998 and subsequent amendments): "Unwanted emissions in the spurious domain".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in Directive 2014/53/EU [i.6] and the following apply:

60 GHz range or 60 GHz band: one of the variously permitted frequencies of operation, between 57 GHz to 71 GHz

activity factor: percentage over any one minute time period when equipment is operating under a given set of conditions

adjacent channel: channels on either side of the nominal channel separated by the nominal channel bandwidth

channel separation: minimum separation (in MHz) between the centre frequencies of two adjacent channels in the channel plan of the radio equipment

integral antenna: antenna which is declared to be part of the radio equipment by the manufacturer

NOTE 1: In some cases, it may not be possible to remove an integral antenna or expose an antenna connector without changing the output characteristics of the radio equipment.

NOTE 2: Even with an integral antenna, it might still be possible to separate the antenna from the equipment using a special tool.

mean power: average power (transmitted or received) during the On Time of the signal

nominal channel bandwidth: bandwidth assigned to a single channel

NOTE: The nominal channel bandwidth is declared by the manufacturer as outlined in clause 5.3.1.

occupied bandwidth: bandwidth of the signal containing 99 % of the transmitted mean power

NOTE: Both below the lower and above the upper frequency limits, the mean power emitted is equal to 0,5 % of the total mean power of the emission.

operating channel: channel on which the RLAN equipment has started the Adaptivity mechanism to start transmissions

smart antenna system: equipment that combines multiple transmit and/or receive antenna elements with a signal processing function to increase its radiation and/or reception capabilities

NOTE: This includes techniques such as spatial multiplexing, beam forming, cyclic delay diversity, etc.

3.2 Symbols

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

dBc	decibel relative to the maximum spectral power density of the transmitted signal
dBm	decibel relative to one milliwatt
dBr	decibel relative to a given maximum power level
f	frequency
GHz	thousand millions of cycles per second
kHz	thousands of cycles per second
μs	millionths of second
W	watt power unit

STANDARD PREVIEW
(standards.iteh.ai)

3.3 Abbreviations

ETSI EN 302 567 V2.2.1 (2021-05)

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

BW	BandWidth
CCA	Clear Channel Assessment
CW	Continuous Wave
EFTA	European Free Trade Association
EIRP	Equivalent Isotropically Radiated Power
ERP	Effective Radiated Power
FER	Frame Error Rate
FLANE	Fixed Local Area Network Extension
LBT	Listen Before Talk
MCS	Modulation and Coding Scheme
PD	Power Density
PDL	spectral Power Density Limit
RBW	Resolution BandWidth
RF	Radio Frequency
RMS	Root Mean Square
STA	Station
TXOP	Transmit Opportunity
UUT	Unit Under Test
VBW	Video BandWidth

4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be in accordance with its intended use. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the operational environmental profile defined by its intended use.

4.2 Conformance requirements

4.2.1 Spectral power density

4.2.1.0 Applicability

The present requirement applies to all equipment within the scope of the present document.

4.2.1.1 Definition

The spectral power density is the mean Equivalent Isotropically Radiated Power (EIRP) density during a transmission burst.

4.2.1.2 Limit

The maximum spectral power density is applicable to the system as a whole when operated at the highest power spectral density level (EIRP). The maximum spectral power density shall be as indicated in table 2.

Table 2: Spectral Power Density Limit (PDL)
<https://standards.iteh.ai/standards/etsi-en-302-567-v2-2-1-2021-05>
<https://standards.iteh.ai/standards/etsi-en-302-567-v2-2-1-2021-05>

Maximum spectral power density (EIRP)
23 dBm/MHz

4.2.1.3 Conformance

Conformance tests as defined in clause 5.3.3 shall be carried out and result compared to the limit.

4.2.2 RF output power

4.2.2.0 Applicability

The present requirement applies to all equipment within the scope of the present document.

4.2.2.1 Definition

The RF output power is the mean Equivalent Isotropically Radiated Power (EIRP) for the equipment during a transmission burst.

4.2.2.2 Limit

The maximum RF output power is applicable to the system as a whole when operated at the highest stated power level. For a smart antenna system, the limit applies to the configuration that results in the highest EIRP. In case of multiple (adjacent or non-adjacent) channels the total RF output power of all channels shall be less than or equal to the limits in table 3.

The maximum RF output power shall be as indicated in table 3.

Table 3: RF output power limit

Maximum power level (EIRP)
40 dBm

4.2.2.3 Conformance

Conformance tests as defined in clause 5.3.4 shall be carried out and result compared to the limit.

4.2.3 Transmitter unwanted emissions in the spurious domain

4.2.3.0 Applicability

The present requirement applies to all equipment within the scope of the present document.

4.2.3.1 Definition

Transmitter spurious emissions are emissions on a frequency, or frequencies, which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products but exclude out-of-band emissions (article 1, No. 1.145 of the ITU-R Radio Regulations [i.9]).

The lower boundary between the spurious domain and the out-of-band domain shall be at a frequency Fl:

- $F_l = \min(57 \text{ GHz}; f_c - \min(2,5 \times \text{nominal channel BW}, 1,5 \times \text{nominal channel BW} + 0,5 \text{ GHz}))$

where f_c is the nominal centre frequency of the transmission.

The upper boundary between the spurious domain and the out-of-band domain shall be at a frequency Fh:

- $F_h = \max(71 \text{ GHz}; f_c + \min(2,5 \times \text{nominal channel BW}, 1,5 \times \text{nominal channel BW} + 0,5 \text{ GHz}))$

4.2.3.2 Limit

The level of unwanted emissions in the spurious domain shall be less than or equal to the limits given in table 4.

Table 4: Transmitter spurious emissions

Frequency range	Emission Limit ERP (≤ 1 GHz) EIRP (> 1 GHz)	Measurement Bandwidth
$30 \text{ MHz} \leq f < 87,5 \text{ MHz}$	-36 dBm	100 kHz
$87,5 \text{ MHz} \leq f \leq 118 \text{ MHz}$	-54 dBm	100 kHz
$118 \text{ MHz} < f < 174 \text{ MHz}$	-36 dBm	100 kHz
$174 \text{ MHz} \leq f \leq 230 \text{ MHz}$	-54 dBm	100 kHz
$230 \text{ MHz} < f < 470 \text{ MHz}$	-36 dBm	100 kHz
$470 \text{ MHz} \leq f \leq 694 \text{ MHz}$	-54 dBm	100 kHz
$694 \text{ MHz} < f \leq 1 \text{ GHz}$	-36 dBm	100 kHz
$1 \text{ GHz} < f < F_l \text{ GHz}$	-30 dBm	1 MHz
$F_h \text{ GHz} < f < 142 \text{ GHz}$	-30 dBm	1 MHz

NOTE: Information in this table is based on ERC Recommendation 74-01 [i.10].

4.2.3.3 Conformance

Conformance tests as defined in clause 5.3.5 shall be carried out and result compared to the limit.

4.2.4 Receiver unwanted emissions

4.2.4.0 Applicability

The present requirement applies to all equipment within the scope of the present document.

4.2.4.1 Definition

These are unwanted emissions in the spurious domain while the equipment is receiving a transmission.

4.2.4.2 Limit

The level of unwanted emissions in the spurious domain shall be less than or equal to the limits given in table 5.

Table 5: Receiver spurious emissions

Frequency band	Emission Limit ERP (≤ 1 GHz) EIRP (> 1 GHz)	Measurement Bandwidth
$30 \text{ MHz} \leq f \leq 1 \text{ GHz}$	-57 dBm	100 kHz
$1 \text{ GHz} < f \leq 142 \text{ GHz}$	-47 dBm	1 MHz

NOTE: Information in this table is based on ERC Recommendation 74-01 [i.10].

4.2.4.3 Conformance

Conformance tests as defined in clause 5.3.6 shall be carried out and result compared to the limit.

4.2.5 Adaptivity (medium access protocol)

ETSI EN 302 567 V2.2.1 (2021-05)

4.2.5.1 Applicability

<https://standards.iteh.ai/catalog/standards/sist/1fa25abd-4e64-4ca0-9ed3-71e8bef654cf/etsi-en-302-567-v2-2-1-2021-05>

The present requirement applies to all equipment within the scope of the present document.

4.2.5.2 Definition

Adaptivity (medium access protocol) is a mechanism designed to facilitate spectrum sharing with other devices.

4.2.5.3 Requirement

Adaptivity (medium access protocol) shall be implemented by the equipment and shall be active under all circumstances.

LBT is mandatory to facilitate spectrum sharing.

The LBT mechanism is as follows:

- 1) Before a single transmission or a burst of transmissions on an Operating Channel, the equipment that initiates transmission shall perform a Clear Channel Assessment (CCA) Check in the Operating Channel.
- 2) If it finds an Operating Channel occupied, it shall not transmit in that channel and it shall not enable other equipment(s) to transmit in that channel. If the CCA check has determined the channel to be no longer occupied and transmission was deferred for the number of empty slots defined by the CCA Check procedure, it may resume transmissions or enable other equipment to transmit on this channel.
- 3) The equipment that initiates transmission shall perform the CCA check using "energy detect". The Operating Channel shall be considered occupied for a slot time of $5 \mu\text{s}$ if the energy level in the channel exceeds the threshold corresponding to the power level given in step 7) below. It shall observe the Operating Channel(s) for the duration of the CCA observation time measured by multiple slot times.