

<b>STN</b>	<b>Pevné rádiové systémy Charakteristiky a požiadavky na zariadenia a antény bod-bod Časť 2: Digitálne systémy pracujúce vo frekvenčných pásmach od 1 GHz do 174,8 GHz Harmonizovaná norma pre prístup k rádiovému spektru</b>	<b>STN EN 302 217-2 V3.4.1</b>  87 2217
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Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 2: Digital systems operating in frequency bands from 1 GHz to 174,8 GHz; Harmonised Standard for access to radio spectrum

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# ETSI EN 302 217-2 V3.4.1 (2025-07)



HARMONISED EUROPEAN STANDARD

**Fixed Radio Systems;  
Characteristics and requirements for  
point-to-point equipment and antennas;  
Part 2: Digital systems operating in frequency bands  
from 1 GHz to 174,8 GHz;  
Harmonised Standard for access to radio spectrum**

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# Contents

Intellectual Property Rights .....	9
Foreword.....	9
Modal verbs terminology.....	10
Introduction .....	10
1 Scope .....	11
2 References .....	11
2.1 Normative references .....	11
2.2 Informative references.....	12
3 Definition of terms, symbols and abbreviations.....	15
3.1 Terms.....	15
3.2 Symbols.....	15
3.3 Abbreviations .....	16
4 Technical requirements specifications .....	16
4.0 Basic understanding of all requirements .....	16
4.1 Framework for categorization of system.....	17
4.1.0 Requirement selection.....	17
4.1.1 Introduction and equipment flexibility .....	17
4.1.2 Operating frequency bands and channel arrangements.....	18
4.1.3 Spectral efficiency classes .....	18
4.1.4 System alternatives .....	19
4.1.5 Channel arrangements and utilization.....	19
4.1.6 Specific requirements for frequency bands.....	20
4.1.7 Minimum RIC density for spectral efficiency class selection.....	21
4.1.8 System identification and traffic loading .....	22
4.1.9 Environmental profile .....	23
4.2 Transmitter requirements .....	23
4.2.0 General: system loading.....	23
4.2.1 Transmitter power and power environmental variation .....	24
4.2.1.1 Transmitter maximum power and EIRP.....	24
4.2.1.2 Transmitter combined nominal output power and EIRP limits .....	24
4.2.1.3 Transmitter output power environmental variation .....	24
4.2.2 Transmitter power and frequency control.....	25
4.2.2.1 Transmitter Power and Frequency Control (ATPC, RTPC and RFC) .....	25
4.2.2.1.0 General background.....	25
4.2.2.1.1 Automatic Transmit Power Control (ATPC).....	25
4.2.2.1.2 Remote Transmit Power Control (RTPC) .....	25
4.2.2.1.3 Transmitter Remote Frequency Control (RFC) .....	25
4.2.3 Transmitter Radio Frequency (RF) spectrum mask .....	25
4.2.3.1 Limits background .....	25
4.2.3.2 Limits .....	29
4.2.4 Transmitter discrete CW components exceeding the transmitter Radio Frequency spectrum mask limit.....	41
4.2.4.1 Transmitter discrete CW components at the symbol rate .....	41
4.2.4.2 Transmitter other discrete CW components exceeding the transmitter Radio Frequency spectrum mask limit.....	41
4.2.5 Transmitter unwanted emissions in the <i>spurious domain</i> .....	42
4.2.6 Transmitter dynamic Change of Modulation Order.....	43
4.2.7 Transmitter Frequency stability .....	44
4.2.8 Transmitter emission limitations outside the allocated band .....	44
4.3 Receiver requirements .....	44
4.3.0 General: System loading .....	44
4.3.1 Receiver unwanted emissions in the <i>spurious domain</i> .....	45
4.3.2 BER as a function of Receiver input Signal Level (RSL).....	45
4.3.3 Receiver selectivity.....	46

4.3.3.1	Introduction.....	46
4.3.3.2	Receiver co-channel, first and second adjacent channel interference sensitivity .....	46
4.3.3.2.1	Requirements basic.....	46
4.3.3.2.2	Limits for co-channel and first adjacent channel interference sensitivity.....	47
4.3.3.2.3	Limits for second adjacent channel interference sensitivity .....	47
4.3.3.3	Receiver Blocking (CW spurious interference sensitivity) .....	48
4.4	Antenna Characteristics.....	48
4.4.1	Integral antennas or dedicated antennas.....	48
4.4.1.1	Introduction.....	48
4.4.1.2	Radiation Pattern Envelope (Off-axis EIRP density).....	48
4.4.1.3	Antenna gain .....	49
4.4.1.4	Antenna Cross-Polar Discrimination (XPD).....	49
4.4.2	Guidelines for <i>stand-alone</i> antennas.....	49
5	Testing for compliance with technical requirements.....	49
5.1	Environmental and other conditions for testing.....	49
5.1.1	Environmental conditions .....	49
5.1.1.1	Generality.....	49
5.1.1.2	Minimum profile for equipment indoor use .....	50
5.1.1.3	Minimum profile for equipment outdoor use .....	50
5.1.2	Testing of equipment and antenna combination .....	50
5.1.3	Other basic conditions .....	50
5.2	Test methods for the transmitter.....	51
5.2.0	General test summary .....	51
5.2.1	Transmitter power and power environmental variation .....	52
5.2.1.1	Transmitter maximum power and EIRP.....	52
5.2.1.2	Transmitter combined nominal output power and EIRP limits.....	53
5.2.1.3	Transmitter output power environmental variation.....	53
5.2.2	Transmitter power and frequency control.....	53
5.2.2.1	Transmitter Power and Frequency Control (ATPC, RTPC and RFC) .....	53
5.2.2.1.1	Automatic Transmit Power Control (ATPC).....	53
5.2.2.1.2	Remote Transmit Power Control (RTPC) .....	53
5.2.2.1.3	Transmitter Remote Frequency Control (RFC) .....	54
5.2.3	Transmitter Radio Frequency spectrum mask.....	54
5.2.4	Transmitter discrete CW components exceeding the transmitter Radio Frequency spectrum mask limit.....	54
5.2.5	Transmitter unwanted emissions in the <i>spurious domain</i> .....	54
5.2.6	Transmitter dynamic Change of Modulation Order.....	55
5.2.7	Transmitter Radio Frequency stability.....	55
5.2.8	Transmitter emission limitations outside the allocated band .....	55
5.3	Test methods for the receiver .....	55
5.3.0	General test summary .....	55
5.3.1	Receiver unwanted emissions in the spurious domain.....	56
5.3.2	BER as a function of Receiver input Signal Level (RSL).....	56
5.3.3	Receiver selectivity.....	57
5.3.3.1	Void.....	57
5.3.3.2	Receiver co-channel, first and second adjacent channel interference sensitivity .....	57
5.3.3.2.1	Void.....	57
5.3.3.2.2	Receiver co-channel and first adjacent channel.....	57
5.3.3.2.3	Receiver second adjacent channel .....	57
5.3.3.3	Receiver Blocking (CW spurious interference sensitivity) .....	57
5.4	Antenna test methods .....	58
5.4.1	Integral antennas or dedicated antenna .....	58
5.4.1.1	Summary .....	58
5.4.1.2	Radiation Pattern Envelope (Off-axis EIRP density) .....	58
5.4.1.3	Antenna gain .....	58
5.4.1.4	Antenna Cross-Polar Discrimination (XPD).....	58
5.4.2	Information on <i>stand-alone</i> antennas tests.....	58

<b>Annex A (informative):</b>	<b>Relationship between the present document and the essential requirements of Directive 2014/53/EU .....</b>	<b>59</b>
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<b>Annex B (normative):</b>	<b>Frequency bands from 1,4 GHz to 2,6 GHz .....</b>	<b>61</b>
B.1	Introduction .....	61
B.2	General characteristics .....	61
B.2.1	Frequency characteristics and channel arrangements .....	61
B.2.2	Transmission capacities .....	62
B.3	Transmitter .....	63
B.3.1	General requirements .....	63
B.3.2	Transmitter Radio Frequency spectrum masks options .....	63
B.4	Receiver .....	64
B.4.1	General requirements .....	64
B.4.2	BER as a function of Receiver input Signal Level (RSL) .....	64
B.4.3	Receiver co-channel, first and second adjacent channels interference sensitivity .....	65
<b>Annex C (normative):</b>	<b>Frequency bands from 3,5 GHz to 11 GHz (channel separation up to 30 MHz, 56/60 MHz and 112 MHz).....</b>	<b>66</b>
C.1	Introduction .....	66
C.2	General characteristics .....	66
C.2.1	Frequency characteristics and channel arrangements .....	66
C.2.2	Transmission capacities .....	68
C.3	Transmitter .....	68
C.3.1	General requirements .....	68
C.3.2	Transmitter Radio Frequency (RF) spectrum masks .....	68
C.4	Receiver .....	69
C.4.1	General requirements .....	69
C.4.2	BER as a function of Receiver input Signal Level (RSL) .....	69
C.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	71
<b>Annex D (normative):</b>	<b>Frequency bands from 4 GHz to 11 GHz (channel separation 40 MHz and 80 MHz).....</b>	<b>73</b>
D.1	Introduction .....	73
D.2	General characteristics .....	73
D.2.1	Frequency characteristics and channel arrangements .....	73
D.2.2	Transmission capacities .....	74
D.3	Transmitter .....	75
D.3.1	General requirements .....	75
D.3.2	Transmitter Radio Frequency spectrum masks.....	75
D.4	Receiver .....	75
D.4.1	General requirements .....	75
D.4.2	BER as a function of Receiver input Signal Level (RSL) .....	75
D.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	77
<b>Annex E (normative):</b>	<b>Frequency bands 13 GHz, 15 GHz and 18 GHz.....</b>	<b>78</b>
E.1	Introduction .....	78
E.2	General characteristics .....	78
E.2.1	Frequency characteristics and channel arrangements .....	78
E.2.2	Transmission capacities .....	79
E.3	Transmitter .....	79
E.3.1	General requirements .....	79
E.3.2	Transmitter Radio Frequency spectrum masks.....	79
E.4	Receiver .....	80
E.4.1	General requirements .....	80
E.4.2	BER as a function of Receiver input Signal Level (RSL) .....	80

E.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	83
<b>Annex F (normative): Frequency bands from 23 GHz to 42 GHz .....</b>		<b>84</b>
F.1	Introduction .....	84
F.2	General characteristics .....	84
F.2.1	Frequency characteristics and channel arrangements .....	84
F.2.2	Transmission capacities.....	85
F.3	Transmitter .....	85
F.3.1	General requirements .....	85
F.3.2	Transmitter Radio Frequency spectrum masks.....	86
F.4	Receiver.....	86
F.4.1	General requirements .....	86
F.4.2	BER as a function of Receiver input Signal Level (RSL) .....	86
F.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	89
<b>Annex G (normative): Frequency bands from 50 GHz to 55 GHz .....</b>		<b>90</b>
G.1	Introduction .....	90
G.2	General characteristics .....	90
G.2.1	Frequency characteristics and channel arrangements.....	90
G.2.2	Transmission capacities.....	91
G.3	Transmitter .....	91
G.3.1	General requirements .....	91
G.3.2	Transmitter Radio Frequency (RF) spectrum masks .....	91
G.4	Receiver.....	92
G.4.1	General requirements .....	92
G.4.2	BER as a function of Receiver input Signal Level (RSL) .....	92
G.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	93
<b>Annex H (informative): Frequency band 57 GHz to 66 GHz .....</b>		<b>94</b>
H.1	Information on FS use of the band.....	94
<b>Annex I (informative): Frequency band 64 GHz to 66 GHz .....</b>		<b>95</b>
I.1	Information on FS use of the band .....	95
<b>Annex J (normative): Frequency bands from 71 GHz to 86 GHz .....</b>		<b>96</b>
J.1	Introduction .....	96
J.2	General characteristics .....	96
J.2.1	Frequency characteristics and channel arrangements.....	96
J.2.2	Transmission capacities.....	97
J.3	Transmitter .....	98
J.3.1	General requirements .....	98
J.3.2	Transmitter power and EIRP limits.....	98
J.3.2.1	Transmitter maximum power and EIRP .....	98
J.3.2.2	Transmitter Combined nominal output power and EIRP limits.....	98
J.3.2.2.0	Generality.....	98
J.3.2.2.1	Equipment without ATPC as permanent feature.....	98
J.3.2.2.2	Equipment implementing ATPC as permanent feature .....	99
J.3.3	Transmitter Radio Frequency spectrum masks.....	101
J.3.4	Transmitter emissions limitations outside the 71 GHz to 76 GHz and 81 GHz to 86 GHz ranges .....	101
J.3.4.1	General requirements.....	101
J.3.4.2	Requirement for emissions falling in the 86 GHz to 92 GHz band .....	102
J.3.4.3	Conformance indications .....	102
J.4	Receiver.....	103
J.4.1	General requirements .....	103

J.4.2	BER as a function of Receiver input Signal Level (RSL) .....	103
J.4.3	Receiver co-channel and first adjacent channel interference sensitivity .....	105
J.5	Minimum antenna gain.....	107
<b>Annex K (normative): Frequency bands from 92 GHz to 114,25 GHz .....</b>		<b>108</b>
K.1	Introduction .....	108
K.2	General characteristics .....	108
K.2.1	Frequency characteristics and channel arrangements .....	108
K.2.2	Transmission capacities.....	109
K.3	Transmitter .....	110
K.3.1	General requirements .....	110
K.3.2	Transmitter power and EIRP limits .....	110
K.3.2.1	Transmitter maximum power and EIRP .....	110
K.3.2.2	Transmitter Combined nominal output power and EIRP limits.....	111
K.3.2.2.0	Generality.....	111
K.3.2.2.1	Equipment without ATPC as permanent feature.....	111
K.3.2.2.2	Equipment implementing ATPC as permanent feature.....	111
K.3.3	Transmitter Radio Frequency (RF) spectrum masks .....	113
K.3.4	Transmitter emissions limitations outside the 92 GHz to 94 GHz, 94,1 GHz to 100 GHz, 102 GHz to 109,5 GHz and 111,8 to 114,25 GHz ranges .....	113
K.3.4.1	General requirement .....	113
K.3.4.2	Requirement for emissions falling in the 86 GHz to 92 GHz, 100 GHz to 102 GHz, 109,5 GHz to 111,8 GHz and 114,25 to 116 GHz ranges .....	114
K.3.4.3	Conformance indications .....	115
K.4	Receiver.....	116
K.4.1	General requirements .....	116
K.4.2	BER as a function of Receiver input Signal Level (RSL) .....	116
K.4.3	Receiver co channel and first adjacent channel interference sensitivity.....	118
K.5	Minimum antenna gain.....	120
<b>Annex L (normative): Frequency bands from 130 GHz to 174,8 GHz .....</b>		<b>121</b>
L.1	Introduction .....	121
L.2	General characteristics .....	121
L.2.1	Frequency characteristics and channel arrangements.....	121
L.2.2	Transmission capacities.....	122
L.3	Transmitter .....	123
L.3.1	General requirements .....	123
L.3.2	Transmitter power and EIRP limits .....	124
L.3.2.1	Transmitter maximum power and EIRP .....	124
L.3.2.2	Transmitter Combined nominal output power and EIRP limits.....	124
L.3.2.2.0	Generality.....	124
L.3.2.2.1	Equipment without ATPC as permanent feature.....	124
L.3.2.2.2	Equipment implementing ATPC as permanent feature.....	125
L.3.3	Transmitter Radio Frequency spectrum masks.....	127
L.3.4	Transmitter emissions limitations outside the 130 GHz to 134 GHz, 141 GHz to 148,5 GHz, 151,5 GHz to 164 GHz and 167 GHz to 174,8 GHz ranges .....	127
L.3.4.1	General requirement .....	127
L.3.4.2	Requirement for emissions falling in the 148,5 GHz to 151,5 GHz and 164 GHz to 167 GHz.....	128
L.3.4.3	Conformance indications .....	128
L.4	Receiver.....	129
L.4.1	General requirements .....	129
L.4.2	BER as a function of Receiver input Signal Level (RSL) .....	129
L.4.3	Receiver co channel and first adjacent channel interference sensitivity.....	132
L.5	Minimum antenna gain.....	136

<b>Annex M:</b>	<b>Void .....</b>	<b>137</b>
<b>Annex N (normative):</b>	<b>Definition of equivalent data rates for packet data, PDH/SDH and other signals on the traffic interface.....</b>	<b>138</b>
N.1	Introduction .....	138
N.2	General characteristics .....	138
N.2.1	Frequency characteristics and channel arrangements .....	138
N.2.2	Transmission capacities.....	138
N.3	System parameters.....	142
N.3.0	Introduction .....	142
N.3.1	Transmitter .....	142
N.3.2	Receiver.....	142
N.3.3	FER as a function of BER .....	142
<b>Annex O (normative):</b>	<b>Test report in relation to flexible systems applications .....</b>	<b>143</b>
O.1	Wide radio-frequency band covering units .....	143
O.2	Multirate/multiformat and channel-aggregation equipment.....	145
O.2.0	Introduction and general principles .....	145
O.2.1	Generic required tests in the test report.....	146
O.2.2	Reduced set of required tests in the test report.....	146
O.2.2.0	Introduction.....	146
O.2.2.1	Reduced transmitter tests .....	146
O.2.2.2	Reduced receiver tests .....	147
O.2.3	Bandwidth adaptive test set requirements .....	148
O.3	Receiver BER and C/I tests in <i>multi-channels</i> systems (including <i>channels-aggregation</i> ) when separate or common SDH or Ethernet single/multiple network payload interfaces are provided.....	149
O.3.0	Introduction .....	149
O.3.1	Case 1: multi-interfaces for two (or more) channels systems where each interface payload is transmitted on one channel only.....	149
O.3.2	Case 2: single interface or multi-interfaces for two (or more) channels system where each payload interface is transmitted equally split on more than one channel.....	152
O.4	Transmitter test provisions for <i>channels-aggregation</i> equipment.....	155
O.4.1	General requirement and test method.....	155
O.4.2	Limits combination for <i>multiple-channels-port</i> case.....	158
<b>Annex P (informative):</b>	<b>Technical background for receiver selectivity and C/I interference sensitivity evaluation.....</b>	<b>161</b>
P.1	Receiver selectivity .....	161
P.1.1	Introduction .....	161
P.1.2	Graphical representation of WBSEL.....	162
P.2	C/I interference sensitivity .....	163
P.2.1	Introduction .....	163
P.2.2	Ideal selectivity and best case C/I value for 2 <sup>nd</sup> adjacent CS.....	163
<b>Annex Q (informative):</b>	<b>Guidelines for using <i>stand-alone antennas</i>.....</b>	<b>168</b>
<b>Annex R (informative):</b>	<b>Payload flexibility .....</b>	<b>169</b>
<b>Annex S (informative):</b>	<b>Test interpretation and measurement uncertainty .....</b>	<b>170</b>
<b>Annex T (informative):</b>	<b>Bibliography.....</b>	<b>171</b>
<b>Annex U (informative):</b>	<b>Change history .....</b>	<b>172</b>
History .....		173

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# Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Access, Terminals, Transmission and Multiplexing (ATTM).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.62] 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.1].

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.

The present document is part 2 of a multi-part deliverable covering Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas. Full details of the entire series can be found in part 1 [5].

<b>National transposition dates</b>	
Date of adoption of this EN:	2 July 2025
Date of latest announcement of this EN (doa):	31 October 2025
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2026
Date of withdrawal of any conflicting National Standard (dow):	30 April 2027

Major changes with respect to previously published versions are summarized in annex U.

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## 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).

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## Introduction

The ETSI EN 302 217 series has been produced in order to rationalize a large number of previous ETSI ENs dealing with equipment and antennas for Point-to-Point (P-P) Fixed Service applications. For more details, see Foreword and Introduction in ETSI EN 302 217-1 [5].

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# 1 Scope

The present document specifies technical characteristics and methods of measurements for Point-to-point (P-P) Digital Fixed Radio Systems (DFRS) operating in frequency bands allocated to Fixed Service (FS) from 1 GHz to 174,8 GHz, corresponding to the appropriate frequency bands from 1,4 GHz to 174,8 GHz as described in relevant annexes B through L.

Systems in the scope of the present document are generally intended to operate in full Frequency Division Duplex (FDD) and cover also unidirectional links applications. Time Division Duplex (TDD) applications, when possibly applicable in a specific band, are explicitly mentioned as appropriate in the relevant annexes B through L.

Other possible prescriptions, limitations and requirements, for operation in specific bands are also explicitly mentioned, as appropriate, in the relevant annexes B through L.

Systems in the scope of the present document are intended to operate only in combination with directive fixed gain antennas respecting the technical requirements in ETSI EN 302 217-4 [6]. Systems in the scope of the present document may be composed by equipment without antennas (see informative annex Q for background) or equipment including *integral* (but physically *detachable*) or *dedicated antenna*.

Systems including *integral antennas* physically *undetachable* from the radio equipment are not in the scope of the present document (see note 1).

NOTE 1: For additional information, the rationale is that the present document as well as ETSI EN 301 126-1 [1] (radio equipment parameters testing) do not provide radiated test methods and ETSI EN 301 126-3-1 [2] (antenna parameters testing) does not provide test methods for undetachable antennas; future revisions could fill this vacancy.

NOTE 2: The relationship between the present document and the essential requirements of article 3.2 of Directive 2014/53/EU [i.1] is given in annex A.

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## 2 References

### 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 in the [ETSI docbox](#).

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.

- [1] [ETSI EN 301 126-1 \(V2.1.1\)](#): "Fixed Radio Systems; Conformance testing; Part 1: Point-to-point equipment - Definitions, general requirements and test procedures".
- [2] [ETSI EN 301 126-3-1 \(V1.1.2\)](#): "Fixed Radio Systems; Conformance testing; Part 3-1: Point-to-Point antennas; Definitions, general requirements and test procedures".
- [3] [CEPT/ERC/REC 74-01](#) (corrected May 2022): "Unwanted emissions in the spurious domain".
- [4] [ETSI EN 301 390 \(V2.1.1\)](#): "Fixed Radio Systems; Point-to-point and Multipoint Systems; Unwanted emissions in the spurious domain and receiver immunity limits at equipment/antenna port of Digital Fixed Radio Systems".
- [5] [ETSI EN 302 217-1 \(V3.4.1\)](#): "Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 1: Overview, common characteristics and requirements not related to access to radio spectrum".

- [6] [ETSI EN 302 217-4 \(V2.2.1\)](#): "Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 4: Antennas".
- [7] [Recommendation ITU-T O.151 \(10-1992\)/Corrigendum 1 \(05-2002\)](#): "Error performance measuring equipment operating at the primary rate and above".
- [8] [Recommendation ITU-T O.181 \(05-2002\)](#): "Equipment to assess error performance on STM-N interfaces".
- [9] [Recommendation ITU-T O.191 \(02-2000\)](#): "Equipment to measure the cell transfer performance of ATM connections".
- [10] [ISO/IEC/IEEE 8802.3™-2021](#): "Telecommunications and exchange between information technology systems - Requirements for local and metropolitan area networks - Part 3: Standard for Ethernet".
- [11] [ITU Radio Regulations \(2024\)](#).
- [12] [ITU-R Resolution 750 \(REV.WRC-19\)](#): "Compatibility between the Earth exploration-satellite service (passive) and relevant active services".
- [13] [ETSI EN 300 019-1-3 \(V2.4.1\)](#): "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-3: Classification of environmental conditions; Stationary use at weatherprotected locations".
- [14] [ETSI EN 300 019-1-4 \(V2.2.1\)](#): "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-4: Classification of environmental conditions; Stationary use at non-weatherprotected locations".

## 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 may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

- [i.1] [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.2] ETSI EG 203 336 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".
- [i.3] [CEPT/ERC/REC \(01\)02 \(2019\)](#): "Preferred channel arrangement for digital fixed service systems operating in the frequency band 31.8 - 33.4 GHz".
- [i.4] [CEPT/ERC/REC 12-02 \(2007\)](#): "Harmonised radio frequency channel arrangements for analogue and digital terrestrial fixed systems operating in the band 12.75 GHz to 13.25 GHz".
- [i.5] [CEPT/ERC/REC 12-03](#): "Determination of the radiated power through groundbased field strength measurements in the frequency range from 30 MHz to 6000 MHz".
- [i.6] [CEPT/ERC/REC 12-05 \(2007\)](#): "Harmonised radio frequency channel arrangements for digital terrestrial fixed systems operating in the band 10.0 - 10.68 GHz".
- [i.7] [CEPT/ERC/REC 12-06 \(2019\)](#): "Preferred channel arrangements for Fixed Service systems operating in the frequency band 10.7-11.7 GHz".

- [i.8] [CEPT/ERC/REC 12-07 \(1996\)](#): "Harmonised radio frequency channel arrangements for digital terrestrial fixed systems operating in the band 14.5 - 14.62 GHz paired with 15.23 - 15.35 GHz".
- [i.9] [CEPT/ERC/REC 12-08 \(2024\)](#): "Harmonised radio frequency channel arrangements and block allocations for low, medium and high capacity systems in the band 3600 MHz to 4200 MHz".
- [i.10] [CEPT/ERC/REC 12-11 \(2015\)](#): "Radio frequency channel arrangements for Fixed Service systems operating in the bands 48.5 to 50.2 GHz / 50.9 to 52.6 GHz"..
- [i.11] [CEPT/ERC/REC 12-12 \(2015\)](#): "Radio frequency channel arrangement for fixed service systems operating in the band 55.78-57.0 GHz".
- [i.12] [CEPT/ERC/REC 14-01 \(2015\)](#): "Radio-frequency channel arrangements for high capacity analogue and digital radio-relay systems operating in the band 5925 MHz - 6425 MHz".
- [i.13] [CEPT/ERC/REC 14-02 \(2014\)](#): "Radio frequency channel arrangements for Fixed Service systems operating in the bands 48.5 to 50.2 GHz / 50.9 to 52.6 GHz".
- [i.14] [CEPT/ERC/REC 14-03 \(1997\)](#): "Harmonised radio frequency channel arrangements and block allocations for low and medium capacity systems in the band 3400 MHz to 3600 MHz".
- [i.15] [CEPT/ERC/REC 70-03 \(2025\)](#): "Relating to the use of Short Range Devices (SRD)".
- [i.16] [CEPT/ERC/REC T/R 12-01 \(2019\)](#): "Harmonised radio frequency channel arrangements for analogue and digital terrestrial fixed systems operating in the band 37-39.5 GHz".
- [i.17] [CEPT/ERC/REC T/R 13-01 \(2024\)](#): "Preferred channel arrangements for fixed services systems operating in the frequency range 1-2.3 GHz".
- [i.18] [CEPT/ERC/REC T/R 13-02 \(2019\)](#): "Preferred channel arrangements for Fixed Services systems in the frequency range 22.0 - 29.5 GHz".
- [i.19] [CEPT ECC/REC \(01\)04 \(2025\)](#): "Radio frequency channel arrangements for point-to-point (P-P) fixed wireless systems in the frequency band 40.5 - 43.5 GHz".
- [i.20] [ECC Report 198](#): "Adaptive modulation and ATPC operations in fixed point-to-point systems - Guideline on coordination procedures".
- [i.21] [CEPT ECC/REC \(02\)02 \(2010\)](#): "Preferred channel arrangements for fixed service systems (point-to-point and point-to-multipoint) operating in the frequency band 31.0-31.3 GHz".
- [i.22] [CEPT ECC/REC \(02\)06 \(2015\)](#): " Channel arrangements for digital fixed service systems operating in the frequency range 7125-8500 MHz".
- [i.23] [CEPT ECC/REC \(05\)02 \(2009\)](#): "Use of the 64 - 66 GHz frequency band for Fixed Service".

NOTE: Withdrawn October 2021.

- [i.24] [CEPT ECC/REC \(05\)07 \(2024\)](#): "Radio frequency channel arrangements for fixed service systems operating in the bands 71-76 GHz and 81-86 GHz".
- [i.25] [CEPT ECC/REC \(09\)01 \(2009\)](#): "Use of the 57 - 64 GHz frequency band for point-to-point Fixed Wireless Systems".

NOTE: Withdrawn October 2021.

- [i.26] [CEPT ECC/REC \(18\)01](#): "Radio frequency channel/block arrangements for Fixed Service systems operating in the bands 130-134 GHz, 141-148.5 GHz, 151.5-164 GHz and 167-174.8 GHz".
- [i.27] [CEPT ECC/REC \(18\)02](#): "Radio frequency channel/block arrangements for Fixed Service systems operating in the bands 92-94 GHz, 94.1-100 GHz, 102-109.5 GHz and 111.8-114.25 GHz".
- [i.28] [CEPT ECC/REC\(14\)06 \(2015\)](#): "Implementation of Fixed Service Point-to-Point narrow channels (3.5 MHz, 1.75 MHz, 0.5 MHz, 0.25 MHz, 0.025 MHz) in the guard bands and centre gaps of the lower 6 GHz (5925 to 6425 MHz) and upper 6 GHz (6425 to 7125 MHz) bands".

- [i.29] ETSI TR 100 028 (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.30] ETSI TR 101 506 (V2.2.1): "Fixed Radio Systems; Generic definitions, terminology and applicability of essential requirements covering article 3.2 of Directive 2014/53/EU to Fixed Radio Systems".
- [i.31] ETSI TR 101 854: "Fixed Radio Systems; Point-to-point equipment; Derivation of receiver interference parameters useful for planning fixed service point-to-point systems operating different equipment classes and/or capacities".
- [i.32] ETSI TR 102 215: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Recommended approach, and possible limits for measurement uncertainty for the measurement of radiated electromagnetic fields above 1 GHz".
- [i.33] ETSI TR 102 565: "Fixed Radio Systems (FRS); Point-to-point systems; Requirements and bit rates of PtP Fixed Radio Systems with packet data interfaces, effects of flexible system parameters, use of mixed interfaces and implications on IP/ATM networks".
- [i.34] ETSI TR 103 103: "Fixed Radio Systems; Point-to-point systems; ATPC, RTPC, Adaptive Modulation (mixed-mode) and Bandwidth Adaptive functionalities; Technical background and impact on deployment, link design and coordination".
- [i.35] Recommendation ITU-R F.382-8: "Radio-frequency channel arrangements for fixed wireless systems operating in the 2 and 4 GHz bands".
- [i.36] Recommendation ITU-R F.383-10: "Radio-frequency channel arrangements for high capacity fixed wireless systems operating in the lower 6 GHz (5 925 to 6 425 MHz) band".
- [i.37] Recommendation ITU-R F.384-11: "Radio-frequency channel arrangements for medium and high capacity digital fixed wireless systems operating in the 6 425-7 125 MHz band".
- [i.38] Recommendation ITU-R F.385-10: "Radio-frequency channel arrangements for fixed wireless systems operating in the 7 110-7 900 MHz band".
- [i.39] Recommendation ITU-R F.386-9: "Radio-frequency channel arrangements for fixed wireless systems operating in the 8 GHz (7 725 to 8 500 MHz) band".
- [i.40] Recommendation ITU-R F.387-13: "Radio-frequency channel arrangements for fixed wireless systems operating in the 10.7-11.7 GHz band".
- [i.41] Recommendation ITU-R F.497-7: "Radio-frequency channel arrangements for fixed wireless systems operating in the 13 GHz (12.75-13.25 GHz) frequency band".
- [i.42] Recommendation ITU-R F.595-11: "Radio-frequency channel arrangements for fixed wireless systems operating in the 17.7-19.7 GHz band".
- [i.43] Recommendation ITU-R F.635-7: "Radio-frequency channel arrangements based on a homogeneous pattern for fixed wireless systems operating in the 4 GHz band".
- [i.44] Recommendation ITU-R F.636-5: "Radio-frequency channel arrangements for fixed wireless systems operating in the 14.4-15.35 GHz band".
- [i.45] Recommendation ITU-R F.637-5: "Radio-frequency channel arrangements for fixed wireless systems operating in the 21.2-23.6 GHz band".
- [i.46] Recommendation ITU-R F.746-11: "Radio-frequency arrangements for fixed service systems".
- [i.47] Recommendation ITU-R F.747-1: "Radio-frequency channel arrangements for fixed wireless systems operating in the 10-10.68 GHz band".
- [i.48] Recommendation ITU-R F.748-4: "Radio-frequency arrangements for systems of the fixed service operating in the 25, 26 and 28 GHz bands".
- [i.49] Recommendation ITU-R F.749-4: "Radio-frequency arrangements for systems of the fixed service operating in sub-bands in the 36-40.5 GHz band".

- [i.50] Recommendation ITU-R F.1098-1: "Radio-frequency channel arrangements for fixed wireless systems in the 1 900 - 2 300 MHz band".
- [i.51] Recommendation ITU-R F.1099-5: "Radio-frequency channel arrangements for high and medium capacity digital fixed wireless systems in the upper 4 GHz (4 400-5 000 MHz) band".
- [i.52] Recommendation ITU-R F.1191-3: "Necessary and occupied bandwidths and unwanted emissions of digital fixed service systems".
- [i.53] Recommendation ITU-R F.1242-0: "Radio-frequency channel arrangements for digital radio systems operating in the range 1 350 MHz to 1 530 MHz".
- [i.54] Recommendation ITU-R F.1243-0: "Radio-frequency channel arrangements for digital radio systems operating in the range 2 290-2 670 MHz".
- [i.55] Recommendation ITU-R F.1496-1: "Radio-frequency channel arrangements for fixed wireless systems operating in the band 51.4-52.6 GHz".
- [i.56] Recommendation ITU-R F.1497-2: "Radio-frequency channel arrangements for fixed wireless systems operating in the band 55.78-66 GHz".
- [i.57] Recommendation ITU-R F.1520-4: "Radio-frequency arrangements for systems in the fixed service operating in the band 31.8-33.4 GHz".
- [i.58] Recommendation ITU-R F.2005-1: "Radio-frequency channel and block arrangements for fixed wireless systems operating in the 42 GHz (40.5 to 43.5 GHz) band".
- [i.59] Recommendation ITU-R F.2006-0: "Radio-frequency channel and block arrangements for fixed wireless systems operating in the 71-76 and 81-86 GHz bands".
- [i.60] Recommendation ITU-R SM.329-12: "Unwanted emissions in the spurious domain".
- [i.61] Recommendation ITU-R SM.1539-1: "Variation of the boundary between the out-of-band and spurious domains required for the application of Recommendations ITU-R SM.1541 and ITU-R SM.329".
- [i.62] [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.63] [Commission decision 2006/771/EC](#) (and subsequent modifications) on harmonisation of the radio spectrum for use by short-range devices.
- [i.64] [ADCO RED position on Measurement uncertainty](#).
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**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**