Draft ETSI EN 301 841-3 V2.1.0 (2016-06)

VHF air-ground Digital Link (VDL) Mode 2;
Technical characteristics and methods of measurement for ground-based equipment;
Part 3: Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU

Reference
REN/ERM-TGAERO-34

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Contents

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Foreword

This draft Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM), and is now submitted for the combined Public Enquiry and 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.4] 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 3 of a multi-part deliverable covering VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment, as identified below:

Part 1: "Physical layer and MAC sub-layer";

Part 2: "Upper layers";

Part 3: "Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU".

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

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.

1 Scope

The present document applies to VDL Mode 2 ground-air digital communications using Differential Eight Phase Shift Keying (D8PSK), intended for channel increments of 25 kHz. The VDL Mode 2 system provides data communication exchanges between aircraft and ground-based systems, operating in the VHF band (117,975 MHz to 137,000 MHz). The scope of the present document is limited to ground based stations.

NOTE: The VDL Mode 2 can be used as an Air/Ground sub-network of the Aeronautical Telecommunication Network (ATN) using a band with AM(R)S spectrum allocation.

The present document contains requirements to demonstrate that "*... Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference*" [i.1].

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the Directive 2014/53/EU [i.1] as well as essential requirements under the SES Interoperability Regulation No 552/2004 [i.5] and related implementing rules and/or essential requirements under the EASA basic Regulation No 216/2008 [i.6] as amended by Regulation No 1108/2009 [i.7] may apply to equipment within the scope of the present document.

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 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.

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

[1] ETSI EN 301 841-1 (V1.4.1) (04-2015): "VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 1: Physical layer and MAC sub-layer".

[2] ETSI EN 300 113-1 (V1.7.1) (11-2011): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement".

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] 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 TR 100 028-1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1".

[i.3] ETSI TR 100 028-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2".

[i.4] 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.5] Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (interoperability Regulation), OJ L 96, 31.03.2004, p. 26 as amended by Regulation (EC) No 1070/2009, OJ L 300, 14.11.2009, p. 34.

[i.6] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC.

[i.7] Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulation (EC) No 216/2008 in the field of aerodromes, air traffic management and air navigation services and repealing Directive 2006/23/EC.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in Directive 2014/53/EU [i.1] and the following apply:

adjacent channel power: amount of the modulated RF signal power transmitted outside of the assigned channel

NOTE: Adjacent channel power includes discrete spurious, signal sidebands, and noise density (including phase noise) at the transmitter output.

adjacent channel rejection: receiver's ability to demodulate the desired signal and meet the uncorrected BER requirement in the presence of an interfering signal in an adjacent channel

NOTE: The ratio (in dB) between the adjacent interfering signal level and the desired signal level necessary to achieve the specified minimum uncorrected BER, is the Adjacent Channel Rejection (ACR) ratio.

Aeronautical Mobile Service (AMS): mobile service between ground based stations and airborne stations, or between aircraft stations, in which survival craft stations may participate

average transmitter output power: average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long, compared with the lowest frequency encountered in the modulation, taken under normal operating conditions

Bit Error Rate (BER): ratio between the number of erroneous bits received and the total number of bits received

NOTE: The uncorrected BER represents the BER without the benefit of Forward Error Correction (FEC).

Co-Channel Interference (CCI): capability of a receiver to demodulate the desired signal and achieve the minimum specified BER performance in the presence of an unwanted signal at the same assigned channel

NOTE: The ratio (in dB) between the wanted signal level and the unwanted signal level is the co-channel interference ratio.

conducted measurements: measurements which are made using a direct RF connection to the equipment under test

environmental profile: range of environmental conditions under which equipment within the scope of the present document is required to comply with the provisions of the present document

ground based station: aeronautical station equipment, in the Aeronautical Mobile Service (AMS), for use with an external antenna and intended for use at a fixed location

radiated measurements: measurements which involve the measurement of a radiated field

spurious emissions: conducted RF 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

NOTE: Spurious emissions include parasitic emissions, intermodulation products and frequency conversion products.

X 25: ITU-T standard for the protocols and message formats that define the interface between a terminal and a packet switching network

3.2 Abbreviations

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

ACR	Adjacent Channel Rejection
AM	Amplitude Modulation
AM(R)S	Aeronautical Mobile (Route) Service
AMS	Aeronautical Mobile Service
ATN	Aeronautical Telecommunication Network
BER	Bit Error Rate
CCI	Co-Channel Interference
D8PSK	Differential Eight Phase Shift Keying
DSB	Double Side Band
EASA	European Aviation Safety Agency
FEC	Forward Error Correction
MAC	Medium Access Control
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
TX	Transmission
VDL	VHF Data Link
VHF	Very High Frequency
VSWR	Voltage Standing Wave Ratio

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 declared by the supplier. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the declared operational environmental profile.

4.2 Conformance requirements

4.2.1 Transmitter requirements

4.2.1.1 Frequency error

4.2.1.1.1 Requirement

Frequency tolerance shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.1.

4.2.1.1.2 Conformance

Conformance tests as defined in clause 5.3.1.1 shall be carried out with the limits defined by clause 4.2.1.1.1.

4.2.1.2 Manufacturer's declared output power

4.2.1.2.1 Requirement

Manufacturer's declared output power shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.2.

4.2.1.2.2 Conformance

Conformance tests as defined in clause 5.3.1.2 shall be carried out with the limits defined by clause 4.2.1.2.1.

4.2.1.3 Adjacent channel power

4.2.1.3.1 Requirement

Adjacent channel power shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.3.

4.2.1.3.2 Conformance

Conformance tests as defined in clause 5.3.1.3 shall be carried out with the limits defined by clause 4.2.1.3.1.

4.2.1.4 Conducted spurious emissions

4.2.1.4.1 Requirement

Conducted spurious emissions shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.4.

4.2.1.4.2 Conformance

Conformance tests as defined in clause 5.3.1.4 shall be carried out with the limits defined by clause 4.2.1.4.1.

4.2.1.5 Cabinet radiation

4.2.1.5.1 Requirement

Cabinet radiation shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.5.

4.2.1.5.2 Conformance

Conformance tests as defined in clause 5.3.1.5 shall be carried out with the limits defined by clause 4.2.1.5.1.

4.2.1.6 Void

4.2.1.7 Intermodulation attenuation

4.2.1.7.1 Requirements

Inter-modulation attenuation shall be as specified in ETSI EN 300 113-1 [2], clause 7.6.3.

If the intended use of the base station equipment is not in the special service conditions class as described in that clause, this has to be stated clearly in the user manual and/or in the installation manual.

NOTE: The required class (general - or special service conditions) depends on the local situation and regulatory frequency assignment.

4.2.1.7.2 Conformance

Conformance tests as defined in clause 5.3.1.7 shall be carried out with the limits defined by clause 4.2.1.7.1.

4.2.1.8 Void

4.2.1.9 RF power release time

4.2.1.9.1 Requirement

RF power release time shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.9.

4.2.1.9.2 Conformance

Conformance tests as defined in clause 5.3.1.9 shall be carried out with the limits defined by clause 4.2.1.9.1.

4.2.1.10 Transient behaviour of the transmitter

4.2.1.10.1 Receiver to transmitter turn-around time

4.2.1.10.1.1 Requirement

Receiver to transmitter turn-around shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.10.1.

4.2.1.10.1.2 Conformance

Conformance tests as defined in clause 5.3.1.10.1 shall be carried out with the limits defined by clause 4.2.1.10.1.1.

4.2.1.10.2 Transmitter to receiver turn-around time

4.2.1.10.2.1 Requirement

Transmitter to receiver turn-around shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.10.2.

4.2.1.10.2.2 Conformance

Conformance tests as defined in clause 5.3.1.10.2 shall be carried out with the limits defined by clause 4.2.1.10.2.1.

4.2.1.11 Modulation Accuracy - Symbol constellation error

4.2.1.11.1 Requirement

Symbol constellation error shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.11.

4.2.1.11.2 Conformance

Conformance tests as defined in clause 5.3.1.11 shall be carried out with the limits defined by clause 4.2.1.11.1.

4.2.1.12 Load VSWR capability

4.2.1.12.1 Requirement

The load VSWR capability is the ability of the transmitter to maintain the limits of wide-band noise and adjacent channel power when a 2:1 mismatch to the transmitter output terminals is applied by a length of feeder, which is varied in electrical length by up to half a wavelength. The requirement shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.13.

4.2.1.12.2 Conformance

Conformance tests as defined in clause 5.3.1.12 shall be carried out with the limits defined by clause 4.2.1.12.1.

4.2.2 Receiver requirements

4.2.2.1 Sensitivity

4.2.2.1.1 Requirement

Sensitivity shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.1.

4.2.2.1.2 Conformance

Conformance tests as defined in clause 5.3.2.1 shall be carried out with the limits defined by clause 4.2.2.1.1.

4.2.2.2 Co-channel interference

4.2.2.2.1 Requirement

Co-channel interference shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.2.

4.2.2.2.2 Conformance

Conformance tests as defined in clause 5.3.2.2 shall be carried out with the limits defined by clause 4.2.2.2.1.

4.2.2.3 First adjacent channel rejection

4.2.2.3.1 Requirement

First adjacent channel rejection shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.3.

4.2.2.3.2 Conformance

Conformance tests as defined in clause 5.3.2.3 shall be carried out with the limits defined by clause 4.2.2.3.1.

4.2.2.4 Spurious response rejection of signals within the VHF aeronautical band

4.2.2.4.1 Requirement

Rejection of signals within the VHF aeronautical band shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.4.

4.2.2.4.2 Conformance

Conformance tests as defined in clause 5.3.2.4 shall be carried out with the limits defined by clause 4.2.2.4.1.

4.2.2.5 Spurious response rejection of signals outside the VHF aeronautical band

4.2.2.5.1 Requirement

Rejection of signals outside the VHF aeronautical band shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.5.

4.2.2.5.2 Conformance

Conformance tests as defined in clause 5.3.2.5 shall be carried out with the limits defined by clause 4.2.2.5.1.

4.2.2.6 In-band Intermodulation response rejection

4.2.2.6.1 Requirement

In-band intermodulation shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.6.

4.2.2.6.2 Conformance

Conformance tests as defined in clause 5.3.2.6 shall be carried out with the limits defined by clause 4.2.2.6.1.

4.2.2.7 Blocking or desensitization

4.2.2.7.1 Requirement

Blocking level shall be as specified in ETSI EN 300 113-1 [2], clause 8.9.3.

4.2.2.7.2 Conformance

Conformance tests as defined in clause 5.3.2.7 shall be carried out with the limits defined by clause 4.2.2.7.1.

4.2.2.8 Conducted spurious emission

4.2.2.8.1 Requirement

Conducted spurious emission shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.8.

4.2.2.8.2 Conformance

Conformance tests as defined in clause 5.3.2.8 shall be carried out with the limits defined by clause 4.2.2.8.1.

4.2.2.9 Cabinet radiation

4.2.2.9.1 Requirement

Cabinet radiation requirements shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.9.

4.2.2.9.2 Conformance

Conformance tests as defined in clause 5.3.2.9 shall be carried out with the limits defined by clause 4.2.2.9.1.

5 Testing for compliance with technical requirements

5.1 Environmental conditions for testing

5.1.0 General

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile.

Where technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions (within the boundary limits of the declared operational environmental profile) to give confidence of compliance for the affected technical requirements.

5.1.1 Test power source

The test power source shall meet the requirements of ETSI EN 301 841-1 [1], clause 8.1.

5.1.2 Normal and extreme test conditions

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

The test conditions and procedures shall be as specified in ETSI EN 301 841-1 [1], clauses 8.2.

5.2 Interpretation of the measurement results

The interpretation of the results recorded in a test report for the measurements described in the present document shall be as follows:

- the measured value related to the corresponding limit will be used to decide whether an equipment meets the requirements of the present document;
- the value of the measurement uncertainty for the measurement of each parameter shall be included in the test report;
- the recorded value of the measurement uncertainty shall be, for each measurement, equal to or lower than the figures in tables 1 and 2.

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Principles for the calculation of measurement uncertainty are contained in ETSI TR 100 028 [i.2] and [i.3], in particular in annex D of the ETSI TR 100 028-2 [i.3].

Tables 1 and 2 are based on such expansion factors.

Table 1: Transmitter measurement uncertainty: maximum values

Measurement uncertainties	Maximum values
Frequency error	±1 x 10^{-9}
Carrier power (normal and extreme test conditions)	±0,75 dB
Adjacent channel power	±2,5 dB
Conducted spurious emissions: below 1 GHz between 1 GHz and 4 GHz	 ±3 dB ±6 dB
Cabinet radiation	±6 dB
Intermodulation attenuation	±3 dB
RF power release time	±20 % of the limits values
Receiver to transmitter turn-around time	±20 % of the limits values
Transmitter to receiver turn-around time	±20 % of the limits values
Modulation Accuracy - Symbol constellation error	±3 dB

Table 2: Receiver measurement uncertainty: maximum values

Measurement uncertainties	Maximum values
Sensitivity	±3 dB
Co-channel interference	±3 dB
First adjacent channel rejection	±4 dB
Spurious response rejection	±4 dB
Intermodulation response rejection	±3 dB
Blocking and desensitization	±4 dB
Conducted spurious emissions: below 1 GHz between 1 GHz and 4 GHz	 ±3 dB ±6 dB
Cabinet radiation	±6 dB

5.3 Conformance tests

5.3.1 Transmitter test specifications

5.3.1.1 Frequency error

The test procedure specified in clause 9.1.1.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.2 Manufacturer's declared output power

The test procedure specified in clause 9.1.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.3 Adjacent channel power

The test procedure specified in clauses 9.1.3.1 to 9.1.3.3 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.4 Conducted Spurious emissions

The test procedure specified in clause 9.1.4 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.5 Cabinet Radiation

The test procedure specified in clause 9.1.5 of ETSI EN 301 841-1 [1] and shall use the test procedure as defined in ETSI EN 300 113-1 [2].

5.3.1.6 Void

5.3.1.7 Inter-modulation attenuation

The test procedure specified in clause 7.6.2 of ETSI EN 300 113-1 [2] shall be carried out.

5.3.1.8 Void

5.3.1.9 RF power release time

The test procedures specified in clause 9.1.9 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.10 Transient behaviour of the transmitter

5.3.1.10.1 Receiver to transmitter turn-around time

The test procedure specified in clause 9.1.10.1 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.10.2 Transmitter to receiver turn-around time

The test procedure specified in clause.9.1.10.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.11 Modulation accuracy - Symbol constellation error

The test procedure specified in clause 9.1.11 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.12 Load VSWR capability

The test procedure specified in clause 9.1.13 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2 Receiver test specifications

5.3.2.1 Sensitivity

The test procedure specified in clause 9.2.1 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.2 Co-channel interference

The test procedure specified in clause 9.2.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.3 First Adjacent channel rejection

The test procedure specified in clause 9.2.3 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.4 Spurious response rejection of signals within the VHF aeronautical band

The test procedure specified in clause 9.2.4 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.5 Spurious response rejection of signals outside the VHF aeronautical band

The test procedure specified in clause 9.2.5 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.6 In-band Intermodulation rejection

The test procedure specified in clause 9.2.6 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.7 Blocking or desensitization

The test procedure specified in clause 8.9.2 of ETSI EN 300 113-1 [2] shall be carried out.

5.3.2.8 Conducted spurious emission

The test procedure specified in clause 9.2.8 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.9 Cabinet Radiation

The test procedure specified in clause 9.2.9 of ETSI EN 301 841-1 [1] shall be carried out and shall use the test procedure as defined in ETSI EN 300 113-1 [2].

Annex A (normative): Relationship between the present document and the essential requirements of Directive 2014/53/EU

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.4] 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.

Table A.1: Relationship between the present document and the essential requirements of Directive 2014/53/EU

Harmonised Standard ETSI EN 301 841-3 The following requirements are relevant to the presumption of conformity under the article 3.2 of Directive 2014/53/EU [i.1]				
Requirement			**Requirement Conditionality**	
No	**Description**	**Reference: Clause No**	**U/C**	**Condition**
1	Frequency error	4.2.1.1	U	
2	Carrier power	4.2.1.2	U	
3	Adjacent channel power	4.2.1.3	U	
4	Transmitter conducted spurious emissions	4.2.1.4	U	
5	Transmitter Cabinet radiation	4.2.1.5	U	
6	Intermodulation attenuation	4.2.1.7	U	
7	RF power release time	4.2.1.9	U	
8	Transient behaviour	4.2.1.10	U	
9	Symbol constellation error	4.2.1.11	U	
10	Load VSWR capability	4.2.1.12	U	
11	Sensitivity	4.2.2.1	U	
12	Co-channel interference	4.2.2.2	U	
13	First Adjacent channel rejection	4.2.2.3	U	
14	Spurious response rejection	4.2.2.4 4.2.2.5	U	
15	In-band Intermodulation response rejection	4.2.2.6	U	
16	Blocking or desensitization	4.2.2.7	U	
17	Receiver conducted spurious emissions	4.2.2.8	U	
18	Receiver Cabinet radiation	4.2.2.9	U	

Key to columns:

Requirement:

No A unique identifier for one row of the table which may be used to identify a requirement.

Description A textual reference to the requirement.

Clause Number Identification of clause(s) defining the requirement in the present document unless another document is referenced explicitly.

Requirement Conditionality:

U/C Indicates whether the requirement shall be unconditionally applicable (U) or is conditional upon the manufacturers claimed functionality of the equipment (C).

Condition	Explains the conditions when the requirement shall or shall not be applicable for a requirement which is classified "conditional".

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) falling within the scope of the present document.

Annex B (informative): Bibliography

- Commission Regulation (EC) No 1265/2007 of 26 October 2007 laying down requirements on air-ground voice channel spacing for the single European sky (Text with EEA relevance), OJEU L283, 27.10.2007, p. 25-36.
- ICAO annex 10 volume V (July 2001, including amendments up to amendment 86): "Aeronautical Radio Frequency Spectrum Utilization".
- Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC (EMC Directive).
- Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (LV Directive).

History

Document history		
V1.1.1	November 2011	Publication
V1.2.1	April 2015	Publication
V2.1.0	June 2016	EN Approval Procedure AP 20160913: 2016-06-15 to 2016-09-13