

|            |                                                                                                                                                                                                                                                                                                                                                |                                                       |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <b>STN</b> | <b>Širokopásmová priama komunikácia vzduch-zem</b><br><b>Zariadenia pracujúce vo frekvenčných rozsahoch</b><br><b>od 1 900 MHz do 1 920 MHz a od 5 855 MHz do 5</b><br><b>875 MHz</b><br><b>Antény pre tvarovanie zväzku</b><br><b>Harmonizovaná norma vzťahujúca sa na základné</b><br><b>požiadavky podľa článku 3.2 Smernice 2014/53/EU</b> | <b>STN</b><br><b>EN 303 316 V1.1.1</b><br><br>87 3316 |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/18

Obsahuje: EN 303 316 V1.1.1:2017

**127323**

# ETSI EN 303 316 V1.1.1 (2017-10)



**Broadband Direct Air-to-Ground Communications;  
Equipment operating in the 1 900 MHz to 1 920 MHz and  
5 855 MHz to 5 875 MHz frequency bands;  
Beamforming antennas;  
Harmonised Standard covering the essential requirements  
of article 3.2 of Directive 2014/53/EU**

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**Reference**

DEN/BRAN-60013

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**Keywords**

aeronautical, broadband, mobile, network, radio

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# Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Broadband Radio Access Networks (BRAN).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.9] 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.5].

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 technical requirements in the present document reflect, in part, the results of studies undertaken within the CEPT on compatibility between broadband direct air-to-ground systems and other applications operating within, or adjacent to, the frequency bands which are designated for BDA2GC operations. These studies are described in ECC Report 209 [i.1] (for the 1 900 MHz to 1 920 MHz band) and ECC Report 210 [i.2] (for the 5 855 MHz to 5 875 MHz band).

The resulting technical and operational requirements to be applied to BDA2GC systems in the 1 900 MHz to 1 920 MHz band and the 5 855 MHz to 5 875 MHz band are contained within ECC Decision(15)02 [i.3] and ECC Decision(15)03 [i.4] respectively.

| National transposition dates                                                           |                 |
|----------------------------------------------------------------------------------------|-----------------|
| Date of adoption of this EN:                                                           | 3 July 2017     |
| Date of latest announcement of this EN (doa):                                          | 31 October 2017 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 30 April 2018   |
| Date of withdrawal of any conflicting National Standard (dow):                         | 30 April 2019   |

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## Modal verbs terminology

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## Executive summary

The present document addresses the Broadband Direct Air to Ground Communications system based on the System Reference Document ETSI TR 101 599 [i.10]. ETSI TR 101 599 [i.10] was used by the ECC, in conjunction with other contributions, to develop technology neutral ECC Decisions on the allocation of European spectrum in the frequency bands 1 900 MHz to 1 920 MHz and 5 855 MHz to 5 875 MHz.

The technical requirements in the present document reflect, in part, the results of studies undertaken within the CEPT on compatibility between broadband direct air-to-ground systems and other applications operating within, or adjacent to, the frequency bands that are designated for BDA2GC operations.

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## Introduction

The present document has been developed in accordance with the guidelines contained in ETSI EG 203 336 [i.6].

# 1 Scope

The present document specifies technical characteristics and methods of measurements for radio equipment at the Ground Station and Aircraft Station for Broadband Direct Air-to-Ground communications systems employing beamforming antennas.

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 bands**

|            | <b>Radiocommunications service frequency bands</b> |
|------------|----------------------------------------------------|
| Transmit 1 | 1 900 MHz to 1 920 MHz                             |
| Receive 1  | 1 900 MHz to 1 920 MHz                             |
| Transmit 2 | 5 855 MHz to 5 875 MHz                             |
| Receive 2  | 5 855 MHz to 5 875 MHz                             |

The present document covers the essential requirements of article 3.2 of Directive 2014/53/EU [i.5] under the conditions identified in annex A.

# 2 References

## 2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited 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.

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

- [1] NIMA Technical Report TR8350.2 (1984, including amendment 1 of 03 January 2000 and amendment 2 of 23 June 2004): "Department of Defense World Geodetic System 1984. Its Definition and Relationships with Local Geodetic Systems".
- [2] ETSI EN 302 502 (V2.1.1) (03-2017): "Wireless Access Systems (WAS); 5,8 GHz fixed broadband data transmitting systems; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU".

## 2.2 Informative references

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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] ECC Report 209: "Compatibility/sharing studies related to Broadband Direct-Air-to-Ground Communications (DA2GC) in the frequency bands 1900-1920 MHz / 2010-2025 MHz and services/applications in the adjacent bands".

- [i.2] ECC Report 210: "Compatibility/sharing studies related to Broadband Direct-Air-to-Ground Communications (DA2GC) in the frequency bands 5855-5875 MHz, 2400-2483.5 MHz and 3400 3600 MHz".
- [i.3] ECC Decision (15)02: "The harmonised use of broadband Direct Air-to-Ground Communications (DA2GC) systems in the frequency band 1900-1920 MHz".
- [i.4] ECC Decision (15)03: "The harmonised use of broadband Direct Air-to-Ground Communications (DA2GC) systems in the frequency band 5855-5875 MHz".
- [i.5] 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.6] ETSI EG 203 336: "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.7] ETSI TR 100 028 (V1.4.1) (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.8] ETSI TR 100 028-2 (V1.4.1): " Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2".
- [i.9] 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.10] ETSI TR 101 599 (V1.1.3) (09-2012): "Electromagnetic compatibility and Radio spectrum matters (ERM) System Reference Document (SRDoc); Broadband Direct-Air-to-Ground Communications System employing beamforming antennas, operating in the 2,4 GHz and 5,8 GHz bands".

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