



**Fixed Radio Systems;
Characteristics and requirements for
point-to-point equipment and antennas;
Part 1: Overview and system-independent
common characteristics**

[ETSI EN 302 217-1 V2.1.1 \(2013-07\)](https://standards.iteh.ai/catalog/standards/etsi/1eb6751d-27ee-460c-8a1a-8fba0bbfdb57/etsi-en-302-217-1-v2-1-1-2013-07)

<https://standards.iteh.ai/catalog/standards/etsi/1eb6751d-27ee-460c-8a1a-8fba0bbfdb57/etsi-en-302-217-1-v2-1-1-2013-07>

Reference

REN/ATTM-04016

Keywordsantenna, DFRS, digital, DRRS, FWA,
point-to-point, radio, transmission**ETSI**650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

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

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

iteh Standards
(<https://standards.iteh.ai>)
Document Preview

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

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

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

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

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

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

Copyright Notification

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

© European Telecommunications Standards Institute 2013.
All rights reserved.

DECTTM, PLUGTESTSTM, UMTSTM and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPPTM and LTETM are Trade Marks of ETSI registered for the benefit of its Members and
of the 3GPP Organizational Partners.
GSM[®] and the GSM logo are Trade Marks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	4
Foreword.....	4
Introduction	5
1 Scope	12
2 References	12
2.1 Normative references	12
2.2 Informative references	15
3 Definitions, symbols and abbreviations	17
3.1 Definitions	17
3.2 Symbols.....	22
3.3 Abbreviations	23
4 General characteristics	26
4.1 Performance and availability requirements	26
4.2 Environmental profiles	26
4.2.1 Environmental profile declared under the R&TTE Directive	26
4.2.2 ETSI environmental profiles	26
4.2.2.1 Equipment within weather-protected locations (indoor locations).....	27
4.2.2.2 Equipment for not-weather-protected locations (outdoor locations).....	27
4.2.3 Test environment profiles	27
4.3 Power supply	27
4.3.1 Power supply profile declared under the R&TTE Directive	27
4.3.2 ETSI power supply profile	28
4.4 System block diagram	28
5 Baseband interfaces and parameters.....	28
5.1 Plesiochronous interfaces	29
5.2 ISDN interfaces	29
5.3 Synchronous digital hierarchy interfaces	29
5.4 Other baseband data interfaces.....	29
Annex A (informative): Miscellaneous characteristics.....	30
A.1 Telecommunications Management Network (TMN) interface	30
A.2 Mechanical characteristics	30
Annex B (informative): Notification of interfaces under article 4.1 of the R&TTE Directive	31
B.1 Applicability of TCAM-RIG format of radio interface specifications to Fixed Services	31
B.2 Proposed list of radio interface specifications for Fixed Services.....	32
Annex C (informative): Cross references to previously relevant ENs and TSs	33
History	36

Intellectual Property Rights

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

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

Foreword

This final draft European Standard (EN) has been produced by ETSI Technical Committee Access, Terminals, Transmission and Multiplexing (ATTM), and is now submitted for the Vote phase of the ETSI standards Two-step Approval Procedure.

The present document is part 1 of a multi-part deliverable covering the Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas, as identified below:

Part 1: "Overview and system-independent common characteristics";

Part 2-1: "System-dependent requirements for digital systems operating in frequency bands where frequency co-ordination is applied";

Part 2-2: "Digital systems operating in frequency bands where frequency co-ordination is applied; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive";

Part 3: "Equipment operating in frequency bands where both frequency coordinated or uncoordinated deployment might be applied; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE";

Part 4-1: "System-dependent requirements for antennas";

Part 4-2: "Antennas; Harmonized EN covering the essential requirements of article 3.2 of R&TTE Directive".

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):	6 months after doa

Major variants with respect to previous published version

- System options identification has been changed, in line with corresponding changes in Parts 2-1 [i.33] and 2-2 [i.34] of EN 302 217. Old systems notations (A.1, ... B.1, ... C.1, ... D.1, ... E.1) have been removed and the system capacity is defined in term of minimum Radio Interface Capacity (RIC) rather than previous hierarchic PDH/SDH interfaces. Each equipment in the scope of the present document refers to a coherent set of transmitter and receiver requirements uniquely defined on the basis of the following identifying parameters:
 - operating frequency band;
 - operating radio frequency channel separation;

- 3) spectral efficiency class, to which the minimum RIC density is associated.
- Cross reference to older "historical" source ENs, no longer of interest has been moved to an annex.
- Required new and updated "definitions".
- Alignment of frequency bands and equipment options introduced in other parts of EN 302 217 series.

Introduction

(i) Generality and historical background

Digital Fixed Radio Systems (DFRS), used in European countries, had been historically specified in a relatively large number of specific European Norms produced by ETSI.

Those previous documents, already superseded by first version of this EN 302 217 series, contained both essential requirements and other requirements that, even if not considered essential under the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (hereafter mentioned as the R&TTE Directive) [1], may be applicable.

Standards for point-to-point systems, including antennas, cover a very large range of traffic capacities, channel separations (CS), modulation formats and applications over a very wide range of frequency bands that are summarized in table 1.

Table 1: Digital Fixed Radio Systems (DFRS) parameters

Parameter	Range
Frequency bands	from 1 GHz to 86 GHz
Traffic capacities	from 9,6 kbit/s to 622 Mbit/s and to Gigabit/s and above in the highest bands
Channel separations	from 25 kHz to 112 MHz and to Gigahertz and above in the highest bands
Modulation formats	from 2 to 2 048 states (amplitude and/or phase and/or frequency modulated states)
Typical applications	POINT-TO-POINT (P-P) CONNECTIONS: rural and urban low/medium/high capacity links for mobile infrastructure, transport/trunk (long haul), FWA/BWA/MWA backhaul, access, governmental (non-military) links, private fixed networks, SAP/SAB P to P audio and video links STAND ALONE ANTENNAS: for all of the above applications when integral antennas are not employed

The regulatory framework for placing radio systems on the market, established by the R&TTE Directive [1] also requires the availability of Harmonized ENs covering the essential requirements under article 3.2 of the R&TTE Directive [1]. EN 302 217 series meet this demand by providing a rational subdivision of requirements into general, system dependent "not essential" and "essential" requirements from the perspective of the R&TTE Directive [1].

Part 1 includes system-independent common characteristics; these requirements are not essential under article 3.2 of the R&TTE Directive [1].

EN 302 217-2-2 [i.34], EN 302 217-3 [i.35] and EN 302 217-4-2 [i.37] are relevant to essential requirements under article 3.2 of the R&TTE Directive [1]. Additional system can be added for new available FS bands and for completing market available options.