

**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**



Reference

RTR/TM-04163

Keywords

point-to-point, radio, transmission, FWA

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

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 2005.
All rights reserved.

DECTTM, **PLUGTESTS**TM and **UMTS**TM are Trade Marks of ETSI registered for the benefit of its Members.
TIPHONTM and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPPTM is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights	4
Foreword.....	4
Introduction	4
1 Scope	5
2 References	5
3 Symbols and abbreviations.....	6
3.1 Symbols.....	6
3.2 Abbreviations	7
4 Overview	7
4.1 The Link Budget.....	7
4.1.1 Receiver input level	8
4.1.2 Fade margins.....	11
4.2 Interference assessment.....	11
4.2.1 General.....	11
4.2.2 Wanted to Unwanted (W/U) ratios	11
4.2.3 Receiver selectivity evaluation	12
4.2.4 Net Filter Discrimination (NFD)	12
4.2.5 The Carrier to Interference (C/I) ratio in mixed payload environment	13
4.2.6 Evaluation of the Wanted to Unwanted (W/U) ratios	14
5 Interference limited assignments.....	14
6 Summary	14
Annex A: Interference limited assignments.....	15
Annex B: Wanted to Unwanted (W/U) ratios.....	16
Annex C: Diagram showing the NFD procedure	19
Annex D: Table of typical values for noise figure and signal/noise at BER = 10⁻⁶	20
Annex E: Receiver selectivity (conservative approach).....	26
Annex F: Receiver selectivity (more realistic approach).....	27
F.1 Gross bit-rate	27
F.2 Derivation of transmitter spectrum mask	27
F.3 Derivation of receiver selectivity	29
F.4 Derivation of cosine roll-off.....	30
F.5 Transmitter mask and receiver selectivity of other equipment classes	30
History	32