

ETSI TS 101 851-3 V1.2.1 (2006-01)

Technical Specification

**Satellite Earth Stations and Systems (SES);
Satellite Component of UMTS/IMT2000;
G-family;
Part 3: Spreading and modulation
(S-UMTS-A 25.213)**



Reference

RTS/SES-00255-3

Keywords

MES, MSS, satellite, UMTS

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 2006.
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	6
2 References	6
3 Symbols and abbreviations.....	6
3.1 Symbols.....	6
3.2 Abbreviations	7
4 Uplink spreading and modulation	7
4.1 Overview	7
4.2 Spreading.....	7
4.2.1 DPCCH/DPDCH	7
4.2.2 PRACH.....	9
4.2.2.1 PRACH preamble part	9
4.2.2.2 PRACH message part.....	9
4.3 Code generation and allocation	10
4.3.1 Channelization codes	10
4.3.1.1 Code definition.....	10
4.3.1.2 Code allocation for DPCCH/DPDCH	11
4.3.1.3 Code allocation for PRACH message part	11
4.3.2 Scrambling codes	11
4.3.2.1 General	11
4.3.2.2 Long scrambling sequence	11
4.3.2.3 Short scrambling sequence.....	13
4.3.2.4 DPCCH/DPDCH scrambling code.....	14
4.3.2.5 PRACH message part scrambling code.....	14
4.3.3 PRACH preamble codes	15
4.3.3.1 Preamble code construction	15
4.3.3.2 Preamble scrambling code	15
4.3.3.3 Preamble signature	15
4.4 Modulation	16
4.4.1 Modulating chip rate	16
4.4.2 Modulation.....	16
5 Downlink spreading and modulation	17
5.1 Spreading.....	17
5.2 Code generation and allocation	18
5.2.1 Channelization codes	18
5.2.2 Scrambling code	18
5.2.3 Synchronization codes	20
5.2.3.1 Code generation	20
5.2.3.2 Code allocation of SSC	21
5.3 Modulation	23
5.3.1 Modulating chip rate	23
5.3.2 Modulation.....	23
Annex A (informative): Generalized Hierarchical Golay Sequences.....	24
A.1 Alternative generation.....	24
Annex B (informative): Bibliography.....	25
History	26