IEEE Std 802.16™/Conformance02-2003
(Conformance to IEEE Std 802.16-2001
as amended by IEEE Std 802.16a™-2003
and IEEE Std 802.16c™-2002)

IEEE Standards

802.16™ Conformance

IEEE Standard for Conformance to IEEE 802.16

Part 2: Test Suite Structure and Test Purpose for 10–66 GHz WirelessMan-SC™ Air Interface

IEEE Computer Society
and the
IEEE Microwave Theory and Techniques Society

Sponsored by the
LAN/MAN Standards Committee

IEEE

Published by
The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

25 February 2004

Print: SH95189
PDF: SS95189

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

IEEE Std 802.16™/Conformance02-2003
(Conformance to IEEE Std 802.16-2001
as amended by IEEE Std 802.16a™ -2003
and IEEE Std 802.16c™-2002)

IEEE Standard for Conformance to IEEE 802.16™

Part 2: Test Suite Structure and Test Purpose for 10–66 GHz WirelessMAN-SC™ Air Interface

Sponsors

LAN/MAN Standards Committee
of the
IEEE Computer Society

and the

IEEE Microwave Theory and Techniques Society

Approved 11 December 2003

IEEE-SA Standards Board

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Grateful acknowledgment is made to the Worldwide Interoperability for Microwave Access (WiMAX) Forum for the permission to use the following source material:

Test Suite Structure and Test Purposes for IEEE Standard 802.16-2001, Copyright © 2003 WiMAX Forum.

Abstract: This standard represents the Test Suite Structure and Test Purposes (TSS&TP), per ISO/IEC 9646-1:1994 and 9646-2:1995 and ITU-T X.290 and X.291, for conformance specification of base stations and subscriber stations based upon the WirelessMAN-SC (10–66 GHz) air interface specified in IEEE 802.16.

Keywords: fixed broadband wireless access networks, metropolitan area network, microwaves, millimeter waves, WirelessMAN™ standards

---

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

Copyright © 2004 by the Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 25 February 2004. Printed in the United States of America.

IEEE, 802, and WirelessMAN are registered trademarks in the U.S. Patent & Trademark Office, owned by the Institute of Electrical and Electronics Engineers, Incorporated.

WirelessMAN-SC is a trademark owned by the Institute of Electrical and Electronics Engineers, Incorporated.

Print: ISBN 0-7381-3881-9 SH95189
PDF: ISBN 0-7381-3882-7 SS95189

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Use of an IEEE Standard is wholly voluntary. The IEEE disclaims liability for any personal injury, property or other damage, of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, or reliance upon this, or any other IEEE Standard document.

The IEEE does not warrant or represent the accuracy or content of the material contained herein, and expressly disclaims any express or implied warranty, including any implied warranty of merchantability or fitness for a specific purpose, or that the use of the material contained herein is free from patent infringement. IEEE Standards documents are supplied "**AS IS**."

The existence of an IEEE Standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the IEEE Standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard. Every IEEE Standard is subjected to review at least every five years for revision or reaffirmation. When a document is more than five years old and has not been reaffirmed, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any IEEE Standard.

In publishing and making this document available, the IEEE is not suggesting or rendering professional or other services for, or on behalf of, any person or entity. Nor is the IEEE undertaking to perform any duty owed by any other person or entity to another. Any person utilizing this, and any other IEEE Standards document, should rely upon the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

Interpretations: Occasionally questions may arise regarding the meaning of portions of standards as they relate to specific applications. When the need for interpretations is brought to the attention of IEEE, the Institute will initiate action to prepare appropriate responses. Since IEEE Standards represent a consensus of concerned interests, it is important to ensure that any interpretation has also received the concurrence of a balance of interests. For this reason, IEEE and the members of its societies and Standards Coordinating Committees are not able to provide an instant response to interpretation requests except in those cases where the matter has previously received formal consideration.

Comments for revision of IEEE Standards are welcome from any interested party, regardless of membership affiliation with IEEE. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Comments on standards and requests for interpretations should be addressed to:

Secretary, IEEE-SA Standards Board
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
USA

Note: Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. The IEEE shall not be responsible for identifying patents for which a license may be required by an IEEE standard or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

The IEEE and its designees are the sole entities that may authorize the use of the IEEE-owned certification marks and/or trademarks to indicate compliance with the materials set forth herein. IEEE grants permission to print hard copies of the forms in this document for purposes of documentation.

Authorization to photocopy portions of any individual standard for internal or personal use is granted by the Institute of Electrical and Electronics Engineers, Inc., provided that the appropriate fee is paid to Copyright Clearance Center. To arrange for payment of licensing fee, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Introduction

(This introduction is not part of IEEE Std 802.16/Conformance02-2003, IEEE Standard for Conformance to IEEE 802.16— Part 2: Test Suite Structure and Test Purposes for 10–66 GHz WirelessMAN-SC Air Interface.)

This represents the Test Suite Structure and Test Purposes (TSS&TP), per ISO/IEC Standards 9641-1:1994, and 9646-2:1995 and ITU-T Standards X.290 and X.291, for conformance specification of base stations and subscriber stations based upon the WirelessMAN-SC (10–66 GHz) air interface specified in IEEE Std 802.16-2001.

Patents

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. The IEEE shall not be responsible for identifying patents for which a license may be required by an IEEE standard or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Conformance test methodology

The multipart conformance test documents for IEEE Standard 802.16 are identified by "IEEE Standard 802.16/ConformanceXX". For example, the first part of the conformance specification for IEEE 802.16 is designated "IEEE Standard 802.16/Conformance01.

Interpretations and errata

Interpretations and errata associated with this amendment may be found at one of the following Internet locations:

— http://standards.ieee.org/reading/ieee/interp/

— http://standards.ieee.org/reading/ieee/updates/errata/

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Participants

This document was developed by the IEEE 802.16 Working Group on Broadband Wireless Access, which is responsible for Wireless Metropolitan Area Network (WirelessMAN™) Standards:

IEEE 802.16 Working Group Officers
Roger B. Marks, *Chair*
Ken Stanwood, *Vice Chair*
Dean Chang, *Secretary*

Carl Eklund served as Working Group Vice Chair during Working Group Letter Ballot.

Primary development was carried out by the Working Group's Task Group C:

Task Group C Officers
Kenneth Stanwood, *Chair*
Carl Eklund, *Technical Editor*

The following members of the IEEE 802.16 Working Group on Broadband Wireless Access participated in the Working Group Letter Ballot in which the draft of this standard was approved:

Aditya Agrawal
Gordon Antonello
Reza Arefi
Jori Arrakoski
Malik Audeh
Dean Chang
Naftali Chayat
Rémi Chayer
Stephen Dick
Brian Edmonston
Brian Eidson
Henry Eilts
Carl Eklund
Avraham Freedman
G. Jack Garrison
Marianna Goldhammer
Zion Hadad
David Husson
Panyuh Joo
Tal Kaitz
Phil Kelly
Ofer Kelman
Brian Kiernan
Itzik Kitroser
Thomas Kolze
Jonathan Labs
Yigal Leiba
Lingjie Li
John Liebetreu
Lars Lindh
Hui-Ling Lou
Heinz Lycklama
Roger B. Marks
Russell McKown
Andrew Middleton
Apurva Mody
Ronald Murias
Robert Nelson
Stanley Reible
Gene Robinson
Amir Sarajedini
Yossi Segal
Radu Selea
Kenneth Stanwood
Paul Struhsaker
Shawn Taylor
William Thomson
David Trinkwon
Rainer Ullmann
Nico van Waes
Eyal Verbin
Arthur Wang
Lei Wang
Stanley Wang
Philip Whitehead
Joanne Wilson
Vladimir Yanover

Copyright © 2004 IEEE. All rights reserved.

Documents
Document Sharing Hub
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

The following members of the IEEE Balloting Committee voted on this standard, whether voting for approval or disapproval, or abstaining.

Ed Callaway
Edward Carley
Amalavoyal Chari
Keith Chow
Todor Cooklev
André Sion Corrêa
Jose M. Costa
Thomas Dineen
Dr. Sourav Dutta
Carl Eklund
John Eng
Avraham Freedman
Ernesto Garcia
Theodore Georgantas
Simon Harrison
Kevin Karcz
Stuart Kerry
Brian Kiernan
Pi-Cheng Law
Christina Lim
Randolph Little
Gregory Luri
Ryan Madron
Nikolai Malykh
Roger B. Marks
Kyle Maus
Ingolf Meier
George Miao
Hiroshi Miyano
Rajesh Moorkath
Paul Nikolich
Chris Osterloh
Vikram Punj
Eugene Robinson
Gil Shultz
Kenneth Stanwood
Carl Stevenson
Mark Tillinghast
James Tomcik
Hung-yu Wei
Oren Yuen

When the IEEE-SA Standards Board approved this standard on 11 December 2003, it had the following membership:

Don Wright, *Chair*
Howard M. Frazier, *Vice Chair*
Judith Gorman, *Secretary*

H. Stephen Berger
Joe Bruder
Bob Davis
Richard DeBlasio
Julian Forster*
Toshio Fukuda
Arnold M. Greenspan
Raymond Hapeman
Donald M. Heirman
Laura Hitchcock
Richard H. Hulett
Anant Jain
Lowell G. Johnson
Joseph L. Koepfinger*
Tom McGean
Steve Mills
Daleep C. Mohla
William J. Moylan
Paul Nikolich
Gary Robinson
Malcolm V. Thaden
Geoffrey O. Thompson
Doug Topping
Howard L. Wolfman

*Member Emeritus

Also included are the following nonvoting IEEE-SA Standards Board liaisons:

Alan Cookson, *NIST Representative*
Satish K. Aggarwal, *NRC Representative*

Michelle Turner
IEEE Standards Project Editor

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

CONTENTS

1. Overview 1
1.1 Introduction 1
1.2 Scope 1
1.3 Purpose 1
2. References 2
3. Definitions and Abbreviations 2
3.1 Definitions 2
3.2 Abbreviations 3
4. Test Suite Structure (TSS) 3
4.1 Structure 3
4.2 Test groups 7
4.3 Test Suites and Protocol Groups 7
4.3.1 Channel Descriptors and Maps 7
4.3.1.1 Map and Frame Structure 7
4.3.1.2 Channel Descriptors 7
4.3.1.3 Channel Descriptor Change 7
4.3.2 Radio Link Control 8
4.3.2.1 Initial Ranging 8
4.3.2.2 Periodic Ranging 8
4.3.2.3 Downlink Burst Profile Management 8
4.3.2.4 Negotiate Basic Capabilities 8
4.3.3 Registration, IP Connectivity and TFTP 8
4.3.3.1 Registration 8
4.3.3.2 Establish IP Connectivity 8
4.3.4 Privacy Key Management 8
4.3.4.1 Authentication 8
4.3.4.2 TEK 8
4.3.4.3 Security Association Management 8
4.3.4.4 Encryption and TEK Scheduling 8
4.3.5 Dynamic Services 9
4.3.5.1 Dynamic Service Addition (DSA) 9
4.3.5.2 Dynamic Service Change (DSC) 9
4.3.5.3 Dynamic Service Deletion (DSD) 9
4.3.6 Bandwidth Allocation and Polling 9
4.3.6.1 Request/Grant 9
4.3.6.2 Multicast Polling 9
4.3.7 Reset and Registration 9
4.3.8 Clock Comparison 9
4.3.9 MAC PDUs 9
4.3.10 PHY 9
4.3.11 ATM Convergence Sublayer 10
4.3.12 Packet Convergence Sublayer 10
4.3.12.1 Packet CS Usage 10
4.3.12.2 Classification 10
4.3.12.3 Classifier DSx Signaling 10
4.3.12.4 Payload Header Suppression 10
4.4 Main Test Groups 10
4.4.1 Capability (CA) Tests 10
4.4.2 Valid Behavior (BV) Tests 10
4.4.3 Invalid Behavior (BI) Tests 10
4.4.4 Inopportune Behavior (BO) Tests 11

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

4.4.5 Timer (TI) Tests ... 11
5. Test Purposes (TP) ... 11
5.1 Introduction ... 11
5.1.1 TP Definition Conventions ... 11
5.1.2 TP Naming Conventions ... 12
5.2 Test Purposes for Subscriber Station (SS) ... 13
5.2.1 Channel Descriptors and Maps – SS ... 13
5.2.1.1 Map and Frame Structure ... 13
5.2.1.1.1 Capabilities ... 13
5.2.1.1.2 Valid Behavior ... 13
5.2.1.1.3 Invalid Behavior ... 14
5.2.1.1.4 Inopportune Behavior ... 14
5.2.1.1.5 Timer ... 15
5.2.1.1.6 Message Formats ... 15
5.2.1.2 Channel Descriptors ... 15
5.2.1.2.1 Capabilities ... 15
5.2.1.2.2 Valid Behavior ... 15
5.2.1.2.3 Invalid Behavior ... 15
5.2.1.2.4 Inopportune Behavior ... 15
5.2.1.2.5 Timer ... 16
5.2.1.2.6 Message Formats ... 16
5.2.1.3 Channel Descriptor Change ... 16
5.2.1.3.1 Capabilities ... 16
5.2.1.3.2 Valid Behavior ... 16
5.2.1.3.3 Invalid Behavior ... 16
5.2.1.3.4 Inopportune Behavior ... 17
5.2.1.3.5 Timer ... 17
5.2.1.3.6 Message Formats ... 17
5.2.2 Radio Link Control – SS ... 17
5.2.2.1 Initial Ranging ... 17
5.2.2.1.1 Capabilities ... 17
5.2.2.1.2 Valid Behavior ... 17
5.2.2.1.3 Invalid Behavior ... 18
5.2.2.1.4 Inopportune Behavior ... 18
5.2.2.1.5 Timer ... 18
5.2.2.1.6 Message Formats ... 19
5.2.2.2 Periodic Ranging ... 19
5.2.2.2.1 Capabilities ... 19
5.2.2.2.2 Valid Behavior ... 19
5.2.2.2.3 Invalid Behavior ... 20
5.2.2.2.4 Inopportune Behavior ... 20
5.2.2.2.5 Timer ... 20
5.2.2.2.6 Message Formats ... 20
5.2.2.3 Downlink Burst Profile Management ... 21
5.2.2.3.1 Capabilities ... 21
5.2.2.3.2 Valid Behavior ... 21
5.2.2.3.3 Invalid Behavior ... 21
5.2.2.3.4 Inopportune Behavior ... 22
5.2.2.3.5 Timer ... 22
5.2.2.3.6 Message Formats ... 22
5.2.2.4 Negotiate Basic Capabilities – SS ... 22
5.2.2.4.1 Capabilities ... 22
5.2.2.4.2 Valid Behavior ... 23
5.2.2.4.3 Invalid Behavior ... 23

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Documents
Document Sharing Hub
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.4.4 Inopportune Behavior 23
5.2.2.4.5 Timer 23
5.2.2.4.6 Message Formats 23
5.2.3 Registration, IP Connectivity, and TFTP – SS 24
5.2.3.1 Registration 24
5.2.3.1.1 Capabilities 24
5.2.3.1.2 Valid Behavior 24
5.2.3.1.3 Invalid Behavior 24
5.2.3.1.4 Inopportune Behavior 24
5.2.3.1.5 Timer 25
5.2.3.1.6 Message Formats 25
5.2.3.2 IP Connectivity 25
5.2.3.2.1 Capabilities 25
5.2.3.2.2 Valid Behavior 25
5.2.3.2.3 Invalid Behavior 25
5.2.3.2.4 Inopportune Behavior 26
5.2.3.2.5 Timer 26
5.2.3.2.6 Message Formats 26
5.2.4 Privacy Key Management and Authentication –SS 26
5.2.4.1 Authorization 26
5.2.4.1.1 Capabilities 26
5.2.4.1.2 Valid Behavior 27
5.2.4.1.3 Invalid Behavior 27
5.2.4.1.4 Inopportune Behavior 28
5.2.4.1.5 Timer 28
5.2.4.1.6 Message formats 28
5.2.4.2 TEK 28
5.2.4.2.1 Capabilities 29
5.2.4.2.2 Valid Behavior 29
5.2.4.2.3 Invalid Behavior 29
5.2.4.2.4 Inopportune Behavior 29
5.2.4.2.5 Timer 30
5.2.4.2.6 Message Formats 30
5.2.4.3 Security Association Management 30
5.2.4.3.1 Capabilities 30
5.2.4.3.2 Valid Behavior 30
5.2.4.3.3 Invalid Behavior 30
5.2.4.3.4 Inopportune Behavior 30
5.2.4.3.5 Timer 31
5.2.4.3.6 Message Format 31
5.2.4.4 Encryption and Key Scheduling 31
5.2.4.4.1 Capabilities 31
5.2.4.4.2 Valid Behavior 31
5.2.4.4.3 Invalid Behavior 31
5.2.4.4.4 Inopportune Behavior 31
5.2.4.4.5 Timer 31
5.2.4.4.6 Message Formats 31
5.2.5 Dynamic Services – SS 32
5.2.5.1 Dynamic Service Addition 32
5.2.5.1.1 Capabilities 32
5.2.5.1.2 Valid Behavior 32
5.2.5.1.3 Invalid Behavior 33
5.2.5.1.4 Inopportune Behavior 34
5.2.5.1.5 Timer 34

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.5.1.6 Message Formats 34
5.2.5.2 Dynamic Service Change 35
5.2.5.2.1 Capabilities 35
5.2.5.2.2 Valid Behavior 35
5.2.5.2.3 Invalid Behavior 36
5.2.5.2.4 Inopportune Behavior 36
5.2.5.2.5 Timer 37
5.2.5.2.6 Message Formats 37
5.2.5.3 Dynamic Service Deletion 37
5.2.5.3.1 Capabilities 37
5.2.5.3.2 Valid Behavior 38
5.2.5.3.3 Invalid Behavior 38
5.2.5.3.4 Inopportune Behavior 38
5.2.5.3.5 Timer 38
5.2.5.3.6 Message Formats 39
5.2.6 Bandwidth Allocation and Polling – SS 39
5.2.6.1 Request/Grant 39
5.2.6.1.1 Capabilities 39
5.2.6.1.2 Valid Behavior 39
5.2.6.1.3 Invalid Behavior 39
5.2.6.1.4 Inopportune Behavior 39
5.2.6.1.5 Timer 40
5.2.6.1.6 Message Formats 40
5.2.6.2 Multicast Polling 40
5.2.6.2.1 Capabilities 40
5.2.6.2.2 Valid Behavior 40
5.2.6.2.3 Invalid Behavior 41
5.2.6.2.4 Inopportune Behavior 41
5.2.6.2.5 Timer 41
5.2.6.2.6 Message Formats 41
5.2.7 Reset and Re-Registration – SS 42
5.2.7.1 Capabilities 42
5.2.7.2 Valid Behavior 42
5.2.7.3 Invalid Behavior 42
5.2.7.4 Inopportune Behavior 43
5.2.7.5 Timer 43
5.2.7.6 Message Formats 43
5.2.8 Clock Comparison – SS 43
5.2.8.1 Capabilities 43
5.2.8.2 Valid Behavior 43
5.2.8.3 Invalid Behavior 43
5.2.8.4 Inopportune Behavior 43
5.2.8.5 Timer 44
5.2.8.6 Message Formats 44
5.2.9 MAC PDUs – SS 44
5.2.9.1 Capabilities 44
5.2.9.2 Valid Behavior 45
5.2.9.3 Invalid Behavior 45
5.2.9.4 Inopportune Behavior 45
5.2.9.5 Timer 45
5.2.9.6 Message Formats 45
5.2.10 Downlink Physical layer – SS 45
5.2.10.1 RS Outer Code t = 10 / BCC – Frame Control 46
5.2.10.1.1 Capabilities 46

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Documents
Document Sharing Hub
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.10.2 RS Outer Code Other Bursts 46
5.2.10.2.1 Capabilities 46
5.2.10.3 Fixed Codeword Operation 47
5.2.10.3.1 Capabilities 47
5.2.10.4 Shortened Last Codeword Operation 47
5.2.10.4.1 Capabilities 47
5.2.10.5 Burst Preamble 47
5.2.10.5.1 Capabilities 47
5.2.10.6 Modulation 48
5.2.10.6.1 Capabilities 48
5.2.10.7 RS Outer Code – Information Block Length 48
5.2.10.7.1 Capabilities 48
5.2.11 Uplink Physical Layer – SS 48
5.2.11.1 Randomization With Programmable Seed 48
5.2.11.1.1 Capabilities 48
5.2.11.2 RS Outer Code – Initial Ranging 49
5.2.11.2.1 Capabilities 49
5.2.11.3 RS Outer Code Other Bursts 49
5.2.11.3.1 Capabilities 49
5.2.11.4 Fixed Codeword Operation 49
5.2.11.4.1 Capabilities 49
5.2.11.5 Shortened Last Codeword Operation 50
5.2.11.5.1 Capabilities 50
5.2.11.6 BCC Inner Code 50
5.2.11.6.1 Capabilities 50
5.2.11.7 Burst Preamble 50
5.2.11.7.1 Capabilities 50
5.2.11.8 Modulation 51
5.2.11.8.1 Capabilities 51
5.2.11.9 RS Outer Code – Information Block Length 51
5.2.11.9.1 Capabilities 51
5.2.11.10 Continuous Wave (CV) Mode 51
5.2.11.10.1 Capabilities 51
5.2.12 Minimum Performance – SS 52
5.2.12.1 Tx Dynamic Range 52
5.2.12.1.1 Capabilities 52
5.2.12.2 Rx Dynamic Range 52
5.2.12.2.1 Capabilities 52
5.2.12.3 Tx RMS Power Level at Maximum Power Level Setting 52
5.2.12.3.1 Capabilities 52
5.2.12.4 Tx Power Level Adjustment Step Accuracy 53
5.2.12.4.1 Capabilities 53
5.2.12.5 Symbol Timing Accuracy 54
5.2.12.5.1 Capabilities 54
5.2.12.6 Tx Burst Timing 54
5.2.12.6.1 Capabilities 54
5.2.12.7 Carrier Frequency 54
5.2.12.7.1 Capabilities 54
5.2.12.8 Spectral Mask 55
5.2.12.8.1 Capabilities 55
5.2.12.9 Ramp Up / Down Time 55
5.2.12.9.1 Capabilities 55
5.2.12.10 Output Noise Power Spectral Density When Tx is not Transmitting 55
5.2.12.10.1 Capabilities 55

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.12.11 Modulation Accuracy 56
5.2.12.11.1 Capabilities 56
5.2.12.12 BER Performance Threshold 56
5.2.12.12.1 Capabilities 57
5.2.12.13 Transition Time from Tx to Rx and from Rx to Tx 58
5.2.12.13.1 Capabilities 59
5.2.12.14 1st Adjacent Channel Interference 59
5.2.12.14.1 Capabilities 59
5.2.12.15 2nd Adjacent Channel Interference 61
5.2.12.15.1 Capabilities 61
5.2.12.16 Tx Power Level Absolute Accuracy 63
5.2.12.16.1 Capabilities 63
5.2.13 ATM Convergence Sublayer – SS 64
5.2.13.1 Capabilities 64
5.2.13.2 Valid Behavior 64
5.2.13.3 Invalid Behavior 66
5.2.13.4 Inopportune Behavior 66
5.2.13.5 Timer 66
5.2.13.6 Message Formats 66
5.2.14 Packet Convergence Sublayer – SS 67
5.2.14.1 Packet CS Usage 67
5.2.14.1.1 Capabilities 67
5.2.14.1.2 Valid Behavior 67
5.2.14.1.3 Invalid Behavior 68
5.2.14.1.4 Inopportune Behavior 68
5.2.14.1.5 Timer 68
5.2.14.1.6 Message Formats 68
5.2.14.2 Classification 68
5.2.14.2.1 Capabilities 68
5.2.14.2.2 Valid behavior 71
5.2.14.2.3 Invalid behavior 71
5.2.14.2.4 Inopportune behavior 71
5.2.14.2.5 Timer 71
5.2.14.2.6 Message Format 71
5.2.14.3 Classifier DSx Signaling 72
5.2.14.3.1 Capabilities 72
5.2.14.3.2 Valid behavior 72
5.2.14.3.3 Invalid behavior 72
5.2.14.3.4 Inopportune behavior 73
5.2.14.3.5 Timer 73
5.2.14.3.6 Message Formats 73
5.2.14.4 Payload Header Suppression 74
5.2.14.4.1 Capabilities 74
5.2.14.4.2 Valid Behavior 74
5.2.14.4.3 Invalid Behavior 75
5.2.14.4.4 Inopportune Behavior 75
5.2.14.4.5 Timer 75
5.2.14.4.6 Message Formats 75
5.3 Test purposes for BS 75
5.3.1 Channel Descriptors and Maps – BS 75
5.3.1.1 Map and Frame Structure 75
5.3.1.1.1 Capabilities 75
5.3.1.1.2 Valid Behavior 76
5.3.1.1.3 Invalid Behavior 77

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.3.1.1.4 Inopportune Behavior 77
5.3.1.1.5 Timer 77
5.3.1.1.6 Message Formats 77
5.3.1.2 Channel Descriptors 77
5.3.1.2.1 Capabilities 77
5.3.1.2.2 Valid Behavior 77
5.3.1.2.3 Invalid Behavior 77
5.3.1.2.4 Inopportune Behavior 78
5.3.1.2.5 Timer 78
5.3.1.2.6 Message Formats 78
5.3.1.3 Channel Descriptor Change 78
5.3.1.3.1 Capabilities 78
5.3.1.3.2 Valid Behavior 78
5.3.1.3.3 Invalid Behavior 79
5.3.1.3.4 Inopportune Behavior 79
5.3.1.3.5 Timer 79
5.3.1.3.6 Message Formats 79
5.3.2 Radio Link Control – BS 79
5.3.2.1 Initial Ranging 79
5.3.2.1.1 Capabilities 79
5.3.2.1.2 Valid Behavior 79
5.3.2.1.3 Invalid Behavior 80
5.3.2.1.4 Inopportune Behavior 81
5.3.2.1.5 Timer 81
5.3.2.1.6 Message Formats 81
5.3.2.2 Periodic Ranging 82
5.3.2.2.1 Capabilities 82
5.3.2.2.2 Valid Behavior 82
5.3.2.2.3 Invalid Behavior 83
5.3.2.2.4 Inopportune Behavior 83
5.3.2.2.5 Timer 83
5.3.2.2.6 Message Formats 83
5.3.2.3 Downlink Burst Profile Management 83
5.3.2.3.1 Capabilities 83
5.3.2.3.2 Valid Behavior 84
5.3.2.3.3 Invalid Behavior 84
5.3.2.3.4 Inopportune Behavior 84
5.3.2.3.5 Timer 84
5.3.2.3.6 Message Formats 84
5.3.2.4 Negotiate Basic 85
5.3.2.4.1 Capabilities 85
5.3.2.4.2 Valid Behavior 85
5.3.2.4.3 Invalid Behavior 85
5.3.2.4.4 Inopportune Behavior 85
5.3.2.4.5 Timer 86
5.3.2.4.6 Message Formats 86
5.3.3 Registration, IP Connectivity, and TFTP – BS 86
5.3.3.1 Registration 86
5.3.3.1.1 Capabilities 86
5.3.3.1.2 Valid Behavior 86
5.3.3.1.3 Invalid Behavior 86
5.3.3.1.4 Inopportune Behavior 87
5.3.3.1.5 Timer 87
5.3.3.1.6 Message Formats 87

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.3.3.2 IP Connectivity 87
5.3.3.2.1 Capabilities 87
5.3.3.2.2 Valid Behavior 88
5.3.3.2.3 Invalid Behavior 88
5.3.3.2.4 Inopportune Behavior 88
5.3.3.2.5 Timer 88
5.3.3.2.6 Message Formats 88
5.3.4 Privacy Key Management and Authentication – BS 88
5.3.4.1 Authorization 89
5.3.4.1.1 Capabilities 89
5.3.4.1.2 Valid Behavior 89
5.3.4.1.3 Invalid Behavior 90
5.3.4.1.4 Inopportune Behavior 90
5.3.4.1.5 Timer 90
5.3.4.1.6 Message Formats 90
5.3.4.2 TEK 91
5.3.4.2.1 Capabilities 91
5.3.4.2.2 Valid Behavior 91
5.3.4.2.3 Invalid Behavior 91
5.3.4.2.4 Inopportune Behavior 91
5.3.4.2.5 Timer 91
5.3.4.2.6 Message Formats 91
5.3.4.3 Security Associations Management 92
5.3.4.3.1 Capabilities 92
5.3.4.3.2 Valid Behavior 92
5.3.4.3.3 Invalid Behavior 92
5.3.4.3.4 Inopportune Behavior 92
5.3.4.3.5 Timer 92
5.3.4.3.6 Message Format 92
5.3.4.4 Encryption and Key Scheduling 92
5.3.4.4.1 Capabilities 93
5.3.4.4.2 Valid Behavior 93
5.3.4.4.3 Invalid Behavior 94
5.3.4.4.4 Inopportune Behavior 94
5.3.4.4.5 Timer 94
5.3.4.4.6 Message Formats 94
5.3.5 Dynamic Services – BS 94
5.3.5.1 Dynamic Service Addition – BS Initiated 94
5.3.5.1.1 Capabilities 94
5.3.5.1.2 Valid Behavior 95
5.3.5.1.3 Invalid Behavior 96
5.3.5.1.4 Inopportune Behavior 96
5.3.5.1.5 Timer 97
5.3.5.1.6 Message Formats 97
5.3.5.2 Dynamic Service Change 97
5.3.5.2.1 Capabilities 97
5.3.5.2.2 Valid Behavior 97
5.3.5.2.3 Invalid Behavior 99
5.3.5.2.4 Inopportune Behavior 99
5.3.5.2.5 Timer 100
5.3.5.2.6 Message Formats 100
5.3.5.3 Dynamic Service Deletion 100
5.3.5.3.1 Capabilities 100
5.3.5.3.2 Valid Behavior 100

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Documents
Document Sharing Hub
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.3.5.3.3 Invalid Behavior 101
5.3.5.3.4 Inopportune Behavior 101
5.3.5.3.5 Timer 102
5.3.5.3.6 Message Formats 102
5.3.6 Bandwidth Allocation and Polling – BS 102
5.3.6.1 Request/Grant 102
5.3.6.1.1 Capabilities 102
5.3.6.1.2 Valid Behavior 104
5.3.6.1.3 Invalid Behavior 104
5.3.6.1.4 Inopportune Behavior 104
5.3.6.1.5 Timer 104
5.3.6.1.6 Message Formats 104
5.3.6.2 Multicast Polling 105
5.3.6.2.1 Capabilities 105
5.3.6.2.2 Valid Behavior 105
5.3.6.2.3 Invalid Behavior 105
5.3.6.2.4 Inopportune Behavior 106
5.3.6.2.5 Timer 106
5.3.6.2.6 Message Formats 106
5.3.7 Reset and Re-Registration – BS 106
5.3.7.1 Capabilities 106
5.3.7.2 Valid Behavior 107
5.3.7.3 Invalid Behavior 107
5.3.7.4 Inopportune Behavior 107
5.3.7.5 Timer 107
5.3.7.6 Message Formats 107
5.3.8 Clock Comparison – BS 107
5.3.8.1 Capabilities 107
5.3.8.2 Valid Behavior 108
5.3.8.3 Invalid Behavior 108
5.3.8.4 Inopportune Behavior 108
5.3.8.5 Timer 108
5.3.8.6 Message Formats 108
5.3.9 MAC PDUs – BS 108
5.3.9.1 Capabilities 108
5.3.9.2 Valid Behavior 109
5.3.9.3 Invalid Behavior 109
5.3.9.4 Inopportune Behavior 109
5.3.9.5 Timer 109
5.3.9.6 Message Formats 110
5.3.10 Downlink Physical layer – BS 110
5.3.10.1 RS Outer Code t = 10 / BCC – Frame Control 110
5.3.10.1.1 Capabilities 110
5.3.10.2 RS Outer Code Other Bursts 110
5.3.10.2.1 Capabilities 110
5.3.10.3 Fixed Codeword Operation 110
5.3.10.3.1 Capabilities 110
5.3.10.4 Shortened Last Codeword Operation 111
5.3.10.4.1 Capabilities 111
5.3.10.5 Burst Preamble 111
5.3.10.5.1 Capabilities 111
5.3.10.6 Modulation 111
5.3.10.6.1 Capabilities 111
5.3.10.7 RS Outer Code – Information Block Length 112

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.3.10.7.1 Capabilities 112
5.3.10.8 Continuous Wave (CW) Mode 112
5.3.10.8.1 Capabilities 112
5.3.11 Uplink Physical layer – BS 112
5.3.11.1 Randomization With Programmable Seed 112
5.3.11.1.1 Capabilities 112
5.3.11.2 RS Outer Code – Initial Ranging 113
5.3.11.2.1 Capabilities 113
5.3.11.3 RS Outer Code Other Bursts 113
5.3.11.3.1 Capabilities 113
5.3.11.4 Fixed Codeword Operation 113
5.3.11.4.1 Capabilities 113
5.3.11.5 Shortened Last Codeword Operation 114
5.3.11.5.1 Capabilities 114
5.3.11.6 BCC Inner Code 114
5.3.11.6.1 Capabilities 114
5.3.11.7 Burst Preamble 114
5.3.11.7.1 Capabilities 114
5.3.11.8 Modulation 115
5.3.11.8.1 Capabilities 115
5.3.11.9 RS Outer Code – Information Block Length 115
5.3.11.9.1 Capabilities 115
5.3.12 Minimum Performance – BS 115
5.3.12.1 Channel Allocation 115
5.3.12.1.1 Capabilities 115
5.3.12.2 Symbol Timing Accuracy 116
5.3.12.2.1 Capabilities 116
5.3.12.3 Carrier Frequency 116
5.3.12.3.1 Capabilities 116
5.3.12.4 Spectral Mask 116
5.3.12.4.1 Capabilities 116
5.3.12.5 Spurious 116
5.3.12.5.1 Capabilities 116
5.3.12.6 Tx RMS Power Level 117
5.3.12.6.1 Capabilities 117
5.3.12.7 Ramp Up / Down Time 117
5.3.12.7.1 Capabilities 117
5.3.12.8 Modulation Accuracy 118
5.3.12.8.1 Capabilities 118
5.3.12.9 Rx Dynamic Range 119
5.3.12.9.1 Capabilities 119
5.3.12.10 BER Performance Threshold 119
5.3.12.10.1 Capabilities 119
5.3.12.11 1st Adjacent Channel Interference 120
5.3.12.11.1 Capabilities 120
5.3.12.12 2nd Adjacent Channel Interference 122
5.3.12.12.1 Capabilities 122
5.3.13 ATM Convergence Sublayer – BS 124
5.3.13.1 Capabilities 124
5.3.13.2 Valid Behavior 125
5.3.13.3 Invalid Behavior 126
5.3.13.4 Inopportune Behavior 126
5.3.13.5 Timer 126
5.3.13.6 Message Formats 126

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.3.14 Packet Convergence Sublayer – BS 126
5.3.14.1 Packet CS Usage 126
5.3.14.1.1 Capabilities 127
5.3.14.2 Classifier Signaling 128
5.3.14.2.1 Capabilities 128
5.3.14.2.2 Valid Behavior 128
5.3.14.2.3 Invalid Behavior 128
5.3.14.2.4 Inopportune Behavior 128
5.3.14.2.5 Timer 128
5.3.14.2.6 Message Formats 128
5.3.14.3 Payload Header Suppression 128
5.3.14.3.1 Capabilities 128
5.3.14.3.2 Valid Behavior 129
5.3.14.3.3 Invalid Behavior 129
5.3.14.3.4 Inopportune Behavior 129
5.3.14.3.5 Timer 129
5.3.14.3.6 Message format 129

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

LIST OF TABLES

Table 1 —Test Suite Groups 3
Table 2 —Test Purpose Description Structure 11
Table 3 —TP Definition Rules 11
Table 4 — TP Naming Convention 12
Table 5 —Map and Frame Structure – Capabilities 13
Table 6 —Map and Frame Structure – Valid Behavior 13
Table 7 —Map and Frame Structure – Invalid Behavior 14
Table 8 —Map and Frame Structure – Timer 15
Table 9 —Channel Descriptors - Capabilities 15
Table 10 —Channel Descriptors – Timer 16
Table 11 —Channel Descriptor Change – Capabilities 16
Table 12 —Initial Ranging – Capabilities 17
Table 13 —Initial Ranging – Valid Behavior 17
Table 14 —Initial Ranging – Invalid Behavior 18
Table 15 —Initial Ranging – Inopportune Behavior 18
Table 16 —Initial Ranging – Timer 18
Table 17 —Periodic Ranging – Capabilities 19
Table 18 —Periodic Ranging – Valid Behavior 19
Table 19 —Periodic Ranging – Invalid Behavior 20
Table 20 —Periodic Ranging – Timer 20
Table 21 —Downlink Burst Profile Management – Capabilities 21
Table 22 —Downlink Burst Profile Management – Valid Behavior 21
Table 23 —Downlink Burst Profile Management – Invalid Behavior 21
Table 24 —Downlink Burst Profile Management – Inopportune Behavior 22
Table 25 —Downlink Burst Profile Management – Timer 22
Table 26 —Negotiate Basic Capabilities 22
Table 27 —Negotiate Basic Capabilities– Valid Behavior 23
Table 28 —Negotiate Basic Capabilities– Invalid Behavior 23
Table 29 —Negotiate Basic Capabilities – Inopportune Behavior 23
Table 30 —Negotiate Basic Capabilities – Timer 23
Table 31 —Registration 24
Table 32 —Registration – Valid Behavior 24
Table 33 —Registration – Invalid Behavior 24
Table 34 —Registration – Timer 25
Table 35 —IP Connectivity – Capabilities 25
Table 36 —IP Connectivity – Timer 26
Table 37 —Authorization – Capabilities 26
Table 38 —Authorization – Valid Behavior 27
Table 39 —Authorization – Invalid Behavior 27
Table 40 —Authorization – Inopportune Behavior 28
Table 41 —Authorization – Timer 28
Table 42 —TEK 29
Table 43 —TEK – Invalid Behavior 29
Table 44 —TEK – Inopportune behavior 29
Table 45 —TEK – Timer 30
Table 46 —Security Association Management – Capabilities 30
Table 47 —Security Association Management – Timer 30
Table 48 —Encryption and Key Scheduling – Capabilities 31
Table 49 —Dynamic Service Addition – Capabilities 32
Table 50 —Dynamic Service Addition – Valid Behavior 32
Table 51 —Dynamic Service Addition – Invalid Behavior 33

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 52 —Dynamic Service Addition – Inopportune Behavior 34
Table 53 —Dynamic Service Addition – Timer 34
Table 54 —Dynamic Service Change – Capabilities 35
Table 55 —Dynamic Service Change – Valid Behavior 35
Table 56 —Dynamic Service Change – Invalid Behavior 36
Table 57 —Dynamic Service Change – Inopportune Behavior 36
Table 58 —Dynamic Service Change – Timer 37
Table 59 —Dynamic Service Deletion – Capabilities 37
Table 60 —Dynamic Service Deletion – Valid Behavior 38
Table 61 —Dynamic Service Deletion – Invalid Behavior 38
Table 62 —Dynamic Service Deletion – Inopportune Behavior 38
Table 63 —Request/Grant – Capabilities 39
Table 64 —Request/Grant – Valid Behavior 39
Table 65 —Multicast Polling – Capabilities 40
Table 66 —Multicast Polling – Valid Behavior 40
Table 67 —Multicast Polling – Invalid Behavior 41
Table 68 —Multicast Polling – Inopportune Behavior 41
Table 69 —Reset and Re-Registration 42
Table 70 —Reset and Re-Registration – Invalid Behavior 42
Table 71 —Clock Comparison – Capabilities 43
Table 72 —Clock Comparison – Invalid Behavior 43
Table 73 —Clock Comparison – Inopportune Behavior 43
Table 74 —Clock Comparison – Timer 44
Table 75 —MAC PDUs – Capabilities 44
Table 76 —MAC PDUs – Valid Behavior 45
Table 77 —MAC PDUs – Invalid Behavior 45
Table 78 —RS Outer Code t = 10 / BCC – Frame Control 46
Table 79 —RS Outer Code Other Bursts 46
Table 80 —Fixed Codeword Operation 47
Table 81 —Shortened Last Codeword Operation 47
Table 82 —Burst Preamble 47
Table 83 —Modulation 48
Table 84 —RS Outer Code – Information Block Length 48
Table 85 —Randomization With Programmable Seed 48
Table 86 —RS Outer Code – Initial Ranging 49
Table 87 —RS Outer Code Other Bursts 49
Table 88 —Fixed Codeword Operation 49
Table 89 —Shortened Last Codeword Operation 50
Table 90 —BCC Inner Code 50
Table 91 —Burst Preamble 50
Table 92 —Modulation 51
Table 93 —RS Outer Code – Information Block Length 51
Table 94 —Continuous Wave (CW) Mode 51
Table 95 —Tx Dynamic Range 52
Table 96 —Rx Dynamic Range 52
Table 97 —Tx RMS Power Level at Maximum Power Level Setting 52
Table 98 —Tx Power Level Adjustment Step Accuracy 53
Table 99 —Symbol Timing Accuracy 54
Table 100 —Tx Burst Timing 54
Table 101 —Carrier Frequency 54
Table 102 —Spectral Mask 55
Table 103 —Ramp Up / Down Time 55
Table 104 —Output Noise Power Spectral Density When Tx is not Transmitting 55
Table 105 —Modulation Accuracy 56

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 106 —BER Performance Threshold 57
Table 107 —Transition Time from Tx to Rx and from Rx to Tx 59
Table 108 —1st Adjacent Channel Interference 59
Table 109 —2nd Adjacent Channel Interference 61
Table 110 —Tx Power Level Absolute Accuracy 63
Table 111 —ATM Convergence Sublayer 64
Table 112 —ATM Convergence Sublayer – Valid Behavior 64
Table 113 —ATM Convergence Sublayer – Invalid Behavior 66
Table 114 —Packet CS Usage 67
Table 115 —Classification 68
Table 116 —Classification – Valid Behavior 71
Table 117 —Classification – Invalid Behavior 71
Table 118 —Classifier DSx Signaling 72
Table 119 —Classifier DSx signaling, Inopportune Behavior 73
Table 120 —Payload Header Suppression 74
Table 121 —Payload Header Suppression – Valid Behavior 74
Table 122 —Payload Header Suppression – Inopportune Behavior 75
Table 123 —Map and Frame Structure 75
Table 124 —Map and Frame Structure – Valid Behavior 76
Table 125 —Map and Frame Structure – Invalid Behavior 77
Table 126 —Channel Descriptors 77
Table 127 —Channel Descriptor Change 78
Table 128 —Initial Ranging 79
Table 129 —Initial Ranging – Valid Behavior 79
Table 130 —Initial Ranging – Invalid Behavior 80
Table 131 —Initial Ranging – Inopportune Behavior 81
Table 132 —Initial Ranging – Timer 81
Table 133 —Periodic Ranging 82
Table 134 —Periodic Ranging – Valid Behavior 82
Table 135 —Periodic Ranging – Invalid Behavior 83
Table 136 —Periodic Ranging – Inopportune Behavior 83
Table 137 —Periodic Ranging – Timer 83
Table 138 —Downlink Burst Profile Management 83
Table 139 —Downlink Burst Profile Management – Valid Behavior 84
Table 140 —Downlink Burst Profile Management – Invalid Behavior 84
Table 141 —Negotiate Basic 85
Table 142 —Negotiate Basic – Valid Behavior 85
Table 143 —Negotiate Basic – Invalid Behavior 85
Table 144 —Negotiate Basic – Inopportune Behavior 85
Table 145 —Registration 86
Table 146 —Registration – Valid Behavior 86
Table 147 —Registration – Invalid Behavior 86
Table 148 —Registration – Inopportune Behavior 87
Table 149 —IP Connectivity 87
Table 150 —IP Connectivity – Invalid Behavior 88
Table 151 —IP Connectivity – Inopportune Behavior 88
Table 152 —IP Connectivity – Timer 88
Table 153 —Authorization 89
Table 154 —Authorization – Valid Behavior 89
Table 155 —Authorization – Invalid Behavior 90
Table 156 —Authorization – Inopportune Behavior 90
Table 157 —TEK – Capabilities 91
Table 158 —TEK – Valid Behavior 91
Table 159 —Security Associations Management 92

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 160 —Security Associations Management – Valid Behavior 92
Table 161 —Encryption and Key Scheduling 93
Table 162 —Encryption and Key Scheduling – Invalid Behavior 94
Table 163 —Dynamic Service Addition 94
Table 164 —Dynamic Service Addition – Valid Behavior 95
Table 165 —Dynamic Service Addition – Invalid Behavior 96
Table 166 —Dynamic Service Addition – Inopportune Behavior 96
Table 167 —Dynamic Service Addition – Timer 97
Table 168 —Dynamic Service Change 97
Table 169 —Dynamic Service Change – Valid Behavior 97
Table 170 —Dynamic Service Change – Invalid Behavior 99
Table 171 —Dynamic Service Change – Inopportune Behavior 99
Table 172 —Dynamic Service Change – Timer 100
Table 173 —Dynamic Service Deletion 100
Table 174 —Dynamic Service Deletion – Valid Behavior 100
Table 175 —Dynamic Service Deletion – Invalid Behavior 101
Table 176 —Dynamic Service Deletion – Inopportune Behavior 101
Table 177 —Dynamic Service Deletion – Timer 102
Table 178 —Request/Grant 102
Table 179 —Request/Grant - Valid Behavior 104
Table 180 —Multicast Polling 105
Table 181 —Multicast Polling – Valid Behavior 105
Table 182 —Multicast Polling – Invalid Behavior 105
Table 183 —Multicast Polling – Inopportune Behavior 106
Table 184 —Multicast Polling – Timer 106
Table 185 —Reset and Re-Registration 106
Table 186 —Clock Comparison 107
Table 187 —MAC PDUs 108
Table 188 —MAC PDUs – Valid Behavior 109
Table 189 —MAC PDUs – Invalid Behavior 109
Table 190 —RS Outer Code t = 10 / BCC – Frame Control 110
Table 191 —RS Outer Code Other Bursts 110
Table 192 —Fixed Codeword Operation 110
Table 193 —Shortened Last Codeword Operation 111
Table 194 —Burst Preamble 111
Table 195 —Modulation 111
Table 196 —RS Outer Code – Information Block Length 112
Table 197 —Continuous Wave (CW) Mode 112
Table 198 —Randomization with Programmable Seed 112
Table 199 —RS Outer Code – Initial Ranging 113
Table 200 —RS Outer Code Other Bursts 113
Table 201 —Fixed Codeword Operation 113
Table 202 —Shortened Last Codeword Operation 114
Table 203 —BCC Inner Code 114
Table 204 —Burst Preamble 114
Table 205 —Modulation 115
Table 206 —RS Outer Code – Information Block Length 115
Table 207 —Channel Allocation 115
Table 208 —Symbol Timing Accuracy 116
Table 209 —Carrier Frequency 116
Table 210 —Spectral Mask 116
Table 211 —Spurious 117
Table 212 —Tx RMS Power Level 117
Table 213 —Ramp Up / Down time 117

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 214 —Modulation Accuracy 118
Table 215 —Rx Dynamic Range 119
Table 216 —BER Performance Threshold 119
Table 217 —1st Adjacent Channel Interference 120
Table 218 —2nd Adjacent Channel Interference 122
Table 219 —ATM Convergence Sublayer 124
Table 220 —ATM Convergence Sublayer – Valid Behavior 125
Table 221 —Packet CS Usage 127
Table 222 —Classifier DSx Signaling 128
Table 223 —Payload Header Suppression 128
Table 224 —Payload Header Suppression – Inopportune Behavior 129

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

IEEE Standard for Conformance to IEEE 802.16™

Part 2:Test Suite Structure and Test Purposes for 10–66 GHz WirelessMAN-SC™ Air Interface

1. Overview

This document is Part 2 of a multi-part deliverable covering the WirelessMan-SC (10–66 GHz) air inteface in IEEE 802.16[1,2] as identified below:

Part 1: Protocol Implementation Conformance Statements (PICS) proforma
Part 2: Test Suite Structure and Test Purposes (TSS&TP) specification
Part 3: Radio Conformance Test (RCT) specification
Future: Abstract Test Suite (ATS) specification

1.1 Introduction

To evaluate conformance of a particular implementation, it is necessary to have a common testing document together with common test procedures. The Test Suite Structure (TSS) and Test Purposes (TP) document serves this purpose.

1.2 Scope

This standard represents the Test Suite Structure and Test Purposes (TSS&TP), per ISO/IEC Standards 9646-1:1994 and 9646-2:1995 and ITU-T Standards X.290 and X.291, for conformance specification of base stations and subscriber stations based upon the WirelessMAN-SC (10–66 GHz) air interface specified in IEEE Std 802.16.

1.3 Purpose

This document describes the structure of the suite of tests and the test purposes for WirelessMAN-SC (10–66 GHz) air interface specified in IEEE Std 802.16. It therefore provides the one of several specifications (per ISO/IEC 9646-1:1994 and 9646-2:1995) required to support conformance and interoperability testing of devices built to the specifications in IEEE 802.16.

[1]When IEEE 802.16 is referenced this generally includes the base document and any existing amendments and corrigenda.

[2]Information on references can be found in Clause 2.

Documents
Document Sharing Hub
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

2. References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document. References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific. For a specific reference, subsequent revisions do not apply. For a nonspecific reference, the latest version applies.

IEEE Std 802.16-2001, IEEE Standard for Local and Metropolitan Area Networks—Part 16: Standard Air Interface for Fixed Wireless Access Systems.[3, 4]

IEEE Std 802.16c™-2002, IEEE Standard for Local and Metropolitan Area Networks—Part 16: Air Interface for Broadband Fixed Wireless Access Systems—Amendment 1: Detailed System profiles for 10–66 GHz.

IEEE Std 802.16a™-2003, IEEE Standard for Local and Metropolitan Area Networks—Part 16: Air Interface for Broadband Fixed Wireless Access Systems—Amendment 2: Medium Access Control Modifications and Additional Physical Layer Specifications for 2–11 GHz.

IEEE P802.16-REVd/D3-2004, Draft Revision of IEEE Standard for Local and Metropolitan Area Networks – Part 16: Air Interface for Broadband Fixed Wireless Access Systems.[5]

IEEE Std 802.16™/Conformance01-2003, IEEE Standard for Conformance to IEEE 802.16—Part 1: Protocol Implementation Conformance Statement (PICS) Proforma for 10–66 GHz WirelessMAN-SC Air Interface.

ISO/IEC 9646-1:1994, Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts.

ISO/IEC 9646-2:1995, Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 2: Abstract test suite specification.

ISO/IEC 9646-6:1995, Information technology - Open Systems Interconnection – Conformance testing methodology and framework - Part 6: Protocol profile test specification.

ISO/IEC 9646-7:1995, Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation conformance statements.

3. Definitions and Abbreviations

3.1 Definitions

For the purposes of the present document, the definitions in IEEE 802.16, as well as those in ISO/IEC 9646-1:1994, ISO/IEC 9646-2:1995, ISO/IEC 9646-6:1995, and ISO/IEC 9646-7:1995, apply.

[3]IEEE Publications are available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, USA (http://standards.ieee.org).

[4]The IEEE standards or products referred to in Clause 2 are trademarks belonging to the Institute of Electrical and Electronics Engineers, Inc.

[5]This IEEE standards project was not approved by the IEEE-SA Standards Board at the time this publication went to press. For information about obtaining a draft, contact the IEEE.

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply in conjunction with those defined in IEEE 802.16 as well as those in ISO/IEC 9646-1:1994, ISO/IEC 9646-2:1995, ISO/IEC 9646-6:1995, and ISO/IEC 9646-7:1995.

CA Capability (test category)
BV Valid Behavior (test category)
BI Invalid Behavior (test category)
BO Inopportune Behavior (test category)
TI Timer (test category)
TSS Test Suite Structure
TP Test Purpose

4. Test Suite Structure (TSS)

4.1 Structure

The following table shows the Test Suite Structure (TSS) including its defined subgroups for conformance testing.

Table 1 — Test Suite Groups

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
Channel Descriptors and Maps		CDM					
	Map and frame structure	MAP	X	X	X		X
	Channel Descriptors	CD	X				X
	Channel descriptor change	CDC	X				
Radio Link Control		RLC					
	Initial Ranging	IRNG	X	X	X	X	X
	Periodic Ranging	PRNG	X	X	X	X	X
	Downlink Burst Profile Management	DBPC	X	X	X	X	X
	Negotiate Basic Capabilities	SBC	X	X	X	X	X

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 1 — Test Suite Groups *(continued)*

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
Registration, IP connectivity and TFTP		INI					
	Registration	REG	X	X	X	X	X
	Establish IP Connectivity	IPC	X	X	X	X	X
Privacy and Key Management		PKM					
	Authorization	AUTH	X	X	X	X	X
	TEK	TEK	X	X	X	X	X
	Security Associations management	SAM	X	X		X	
	Encryption and TEK scheduling	EKS	X		X		
Dynamic Services		DS	X	X	X	X	X
	Dynamic Service Addition	DSA	X	X	X	X	X
	Dynamic Service Change	DSC	X	X	X	X	X
	Dynamic Service Deletion	DSD	X	X	X	X	X
Bandwidth allocation and polling		BWA					
	Request/Grant	REQ	X	X			
	Multicast Polling	MCP	X	X	X	X	X
Reset and Reregistration		RER	X		X		
	Reset/De-register	RES	X		X		
Clock Comparison		CCC	X		X	X	X
	Clock Comparison	CCC	X		X	X	X

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 1 — Test Suite Groups *(continued)*

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
MAC PDU		MAC					
	MAC PDU	PDU	X	X	X		
Downlink Physical Layer		PHYDL					
	Frame Control	FC	X				
	RS Outer Code	RS	X				
	Fixed Codeword	FCO	X				
	Shortened Codeword	SC	X				
	Burst Preamble	BP	X				
	Modulation	M	X				
	Block Length	IBL	X				
	Continuous Wave	CW	X				
Uplink Physical Layer		PHYUL					
	Randomization and Seed	RPS	X				
	Initial Ranging	IR	X				
	RS Outer Code	RS	X				
	Fixed Codeword	FCO	X				
	Shortened Codeword	SC	X				
	BCC Inner Code	BCC	X				
	Burst Preamble	BP	X				
	Modulation	M	X				
	Block Length	IBL	X				
	Continuous Wave	CW	X				

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 1 — Test Suite Groups *(continued)*

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
PHY Minimum Performance		PHYMP					
	Channel Allocation	CHA	X				
	Tx Dynamic Range	TDR	X				
	Rx Dynamic Range	RDR	X				
	Tx RMS Power	TXP	X				
	Tx Power Adjust	ASA	X				
	Symbol Timing	STA	X				
	Tx Burst Timing	BT	X				
	Carrier Frequency	CF	X				
	Spectral Mask	SM	X				
	Spurious	SP	X				
	Ramp up/down	RUD	X				
	Output Noise	ON	X				
	Modulation Accuracy	MA	X				
	Bit Error Rate	BER	X				
	Transition Time	TT	X				
	1st Adj Channel	1AC	X				
	2nd Adj Channel	2AC	X				
	Tx Absolute Power	PAA	X				
ATM CS		ACS					
	ATM CS	ATM	X	X	X		
Packet CS		PCS					

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 1 — Test Suite Groups *(continued)*

Test Suite Groups	Protocol Groups	Naming Conventions	Test Groups				
			CA	BV	BI	BO	TI
	Packet CS usage	PCU	X				
	Classification	CLS	X	X	X		
	Classifier DSx Signaling	CDS	X			X	X
	Payload header suppression	PHS	X	X		X	

4.2 Test groups

The test groups are organized into three levels of groups. The levels include the test suite groups, protocol groups, and test groups. The test suites are the highest level breakdowns. The second level separates the test suite groups into protocol groups within each test suite. The last level in each branch contains one or more of the standard ISO subgroups capability (CA), valid behavior (BV), invalid behavior (BI), inopportune behavior (BO), and time (TI) (defined in Clause 4.4).

4.3 Test Suites and Protocol Groups

The protocol groups identify the each of the subdivisions of the test suites.

The Test Suites define the top level testable areas for conformance testing. The test suites are shown in Table 1.

The protocol groups within each test suite are defined below.

4.3.1 Channel Descriptors and Maps

4.3.1.1 Map and Frame Structure

Tests for verifying the generation and usage of maps.

4.3.1.2 Channel Descriptors

Tests for verifying the generation and usage of channel descriptor messages.

4.3.1.3 Channel Descriptor Change

Tests for verifying the protocol for channel descriptor change.

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

4.3.2 Radio Link Control

4.3.2.1 Initial Ranging

Tests for verifying initial ranging.

4.3.2.2 Periodic Ranging

Test for verifying periodic ranging.

4.3.2.3 Downlink Burst Profile Management

Tests for verifying downlink burst profile management.

4.3.2.4 Negotiate Basic Capabilities

Tests for verifying the SBC protocol.

4.3.3 Registration, IP Connectivity and TFTP

4.3.3.1 Registration

Tests for verifying the registration protocol.

4.3.3.2 Establish IP Connectivity

Tests for verifying DHCP, Network Time Protocol and TFTP related functions.

4.3.4 Privacy Key Management

The Privacy Key Management function group is divided into three functional modules. These include authentication, traffic encryption keys (TEKs), authorization keys (AKs), and security associations (SAIDs). This function is primarily responsible for validating conformance of the normal operation of the authorization and key exchanges and to validate security associations between the SS and BS.

4.3.4.1 Authentication

Tests for verifying the SS Authentication and authorization procedure.

4.3.4.2 TEK

Tests for verifying the TEK exchange.

4.3.4.3 Security Association Management

Tests for verifying SA management.

4.3.4.4 Encryption and TEK Scheduling

Tests for verifying the encryption methods and key usage.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

4.3.5 Dynamic Services

The Dynamic Services test suite is broken down into three protocol groups. These are Dynamic Service Addition (DSA), Dynamic Service Change (DSC), and Dynamic Service Deletion (DSD). Those three protocol groups are further broken down into functional test groups.

4.3.5.1 Dynamic Service Addition (DSA)

This protocol group covers the tests to validate conformance to the Dynamic Service Addition functions. Normal DSA message flows are validated as well as invalid or inopportune DSA message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSA process, both BS and SS initiated.

4.3.5.2 Dynamic Service Change (DSC)

This protocol group covers the tests to validate conformance to the Dynamic Service Change functions. Normal DSC message flows are validated as well as invalid or inopportune DSC message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSC process, both BS and SS initiated.

4.3.5.3 Dynamic Service Deletion (DSD)

This protocol group covers the tests to validate conformance to the Dynamic Service Deletion functions. Normal DSD message flows are validated as well as invalid or inopportune DSD message behavior between a BS and SS. Timer tests are also identified to test timeouts during the DSD process, both BS and SS initiated.

4.3.6 Bandwidth Allocation and Polling

Tests for verifying correctness of bandwidth allocation and polling behavior.

4.3.6.1 Request/Grant

Tests to verify the request/grant protocol.

4.3.6.2 Multicast Polling

Tests of the procedures for adding and removing an SS to/from a multicast polling group.

4.3.7 Reset and Registration

Tests verifying correct behavior associated to the RES-CMD and DREG-CMD messages.

4.3.8 Clock Comparison

Tests to verify the transmission of the network clock.

4.3.9 MAC PDUs

Tests to verify MAC PDU related operations.

4.3.10 PHY

Tests to verify the implementation of the physical layer functions.

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

4.3.11 ATM Convergence Sublayer

Tests to verify ATM CS functionality.

4.3.12 Packet Convergence Sublayer

Tests to verify Packet CS functionality.

4.3.12.1 Packet CS Usage

Tests for verifying that packets are encapsulated correctly by the Packet CS implementation.

4.3.12.2 Classification

Tests to verify correct packet classification.

4.3.12.3 Classifier DSx Signaling

Tests of the DSx signaling associated with classifiers.

4.3.12.4 Payload Header Suppression

Tests to verify PHS operation.

4.4 Main Test Groups

The main test groups are the capability (CA), the valid behavior (BV), the invalid behavior (BI), inopportune behavior (BO) and the timer (TI) tests group.

4.4.1 Capability (CA) Tests

This test sub group shall provide limited testing of the major IUT capabilities aiming to insure that the claimed capabilities are correctly supported, according to the PICS. Note that CA tests are very similar to Valid Behavior (BV) tests. The distinction will be that CA tests will be the normal default case of messages and BV tests will be any legal normal variants (for example, change the cryptographic suite selection from the default).

4.4.2 Valid Behavior (BV) Tests

This test sub group shall verify that the IUT reacts in conformity with the TS, after receipt or exchange of valid Protocol Data Units (PDUs). Valid PDUs means that the exchange of messages and the content of the exchanged messages are considered as valid. Note that CA tests are very similar to Valid Behavior (BV) tests. The distinction will be that CA tests will be the normal default case of messages and BV tests will be any legal normal variants (for example, change the cryptographic suite selection from the default).

NOTE— It is assumed that a method to look at messages at a protocol level is available (this may be a serial port session, a protocol analyzer, etc.)

4.4.3 Invalid Behavior (BI) Tests

This test sub group shall verify that the IUT reacts in conformity with the TS, after receipt of a syntactically invalid PDU.

NOTES

1—It is assumed that a method to look at messages at a protocol level is available (this may be a serial port session, a protocol analyzer, etc.).
2—Care must be taken when defining tests in this group as they should be according to requirements in IEEE 802.16 or in the PICS Proforma.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

4.4.4 Inopportune Behavior (BO) Tests

This test sub group shall verify that the IUT reacts in conformity with the TS, after receipt of a syntactically correct PDU not expected in the actual message exchange. (See NOTE 1 and NOTE 2 in 4.4.3.)

4.4.5 Timer (TI) Tests

This test sub group shall verify that the IUT reacts in conformity with the TS, after timer activity (start, stop, expiration, etc.).

5. Test Purposes (TP)

5.1 Introduction

This Clause contains the details pertaining to each TP defined in the TSS. Each test purpose contains a description of a well defined objective of testing, focusing on a single conformance requirement or a set of related conformance requirements.

5.1.1 TP Definition Conventions

The TPs are defined following particular rules as shown in Table 2 and Table 3.

Table 2 — Test Purpose Description Structure

TP ID according to the TP naming conventions	Reference: Initial condition: Stimulus: Expected behavior:

Table 3 — TP Definition Rules

TP ID	The TP ID is a unique identifier specified according to the TP naming conventions defined in sub clause TP Naming Conventions
Reference	The reference shall contain the references of the subject to be validated by the actual TP (specification reference, clause, and paragraph).
Initial Condition	The condition defines in which initial state the IUT has to be to apply the actual TP.
Stimulus	The stimulus defines the test event to which the TP is related.
Expected behavior	Definition of the events that are expected from the IUT to conform to the base specification.

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.1.2 TP Naming Conventions

The identifier of the TP is built according to Table 4.

Table 4 — TP Naming Convention

Identifier Format: TP/<st>/<tg>/<pg>/<x>-<nnn>	**Abbreviation**	**Abbreviation Meaning**
<st> = side type	BS	Base Station
	SS	Subscriber Station
<tg> = protocol group	See Table 1	
<pg> = protocol group	See Table 1	
<x> = test category	CA	Capability Tests
	BV	Valid Behavior Tests
	BI	Invalid Behavior Tests
	BO	Inopportune Behavior Tests
	TI	Timer Tests
<nnn> = sequential number	(000 – 999)	Test Purpose Number
NOTE—TP/SS/DS/DSA/BV-001 is the valid behavior test purpose number 001 of the Dynamic Service Addition protocol group of the Dynamic Services protocol group implemented at the SS side.		

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2 Test Purposes for Subscriber Station (SS)

5.2.1 Channel Descriptors and Maps – SS

5.2.1.1 Map and Frame Structure

5.2.1.1.1 Capabilities

Table 5 — Map and Frame Structure – Capabilities

TP/SS/CDM/MAP/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.21/Item 1 Initial condition: SS has not acquired DL parameters. Stimulus: Switch on. Expected behavior: Check that the IUT starts scanning for DL channels.
TP/SS/CDM/MAP/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.21/Item1, IEEE Std 802.16/Conformance01-2003, Table A.123/Item 1. Initial condition: SS scanning for downlink channel. Stimulus: Switch on. Expected behavior: Check that IUT only scans channels contained in its Frequency list.
TP/SS/CDM/MAP/CA-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.21/Item 2, IEEE Std 802.16/Conformance01-2003, Table A.49, IEEE Std 802.16/Conformance01-2003, Table A.123/Item 1. Initial condition: SS scanning for downlink channel. Stimulus: BS sends DL-MAP messages with a period of 1 ms. Expected behavior: Check that DL-MAP message received with a period of 1 ms.

5.2.1.1.2 Valid Behavior

Table 6 — Map and Frame Structure – Valid Behavior

TP/SS/CDM/MAP/BV-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A21/Item 1, IEEE Std 802.16/Conformance01-2003, Table A.123/Item 1. Initial condition: SS scanning for downlink channel. Stimulus: BS sends DL-MAP messages with a period of 1 ms. Expected behavior: Check that the IUT moves on to scanning next channel if BS ID is not found on the list of allowed values.
TP/SS/CDM/MAP/BV-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.22, IEEE Std 802.16/Conformance01-2003, Table A.50. Initial condition: SS operational. BS transmitting UL Maps with minimum relevance. Stimulus: BS sends UL-MAP granting bandwidth to the SS. Expected behavior: Check that the IUT correctly transmits data in the allocated UL grant.
TP/SS/CDM/MAP/BV-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.18. Initial condition: SS operational. BS transmitting UL Maps with maximum relevance. Stimulus: BS sends UL-MAP granting bandwidth to the SS. Expected behavior: Check that the IUT correctly transmits data in the allocated UL grant.
TP/SS/CDM/MAP/BV-003	Reference: IEEE Std 802.16/Conformance01-2003, Table A.123/Item 2. Initial condition: SS operational, service established between SS and test BS. Stimulus: Test BS sends MAC PDUs spread across multiple Transmission CS PDUs. Expected behavior: SS correctly receives data.
TP/SS/CDM/MAP/BV-004	Reference: IEEE Std 802.16/Conformance01-2003, Table A.123/Item 2. Initial condition: SS operational, service established between SS and test BS. Stimulus: Test BS sends some MAC PDUs starting in the middle of Transmission CS PDUs. Expected behavior: SS correctly receives data.

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

Table 6 — Map and Frame Structure – Valid Behavior *(continued)*

TP/SS/CDM/MAP/BV-005	Reference: IEEE Std 802.16/Conformance01-2003, Table A.124/Item 1. Initial condition: SS operational, service established between SS and test BS. Packing off. Stimulus: SS receives packets from user ports at a rate sufficient to cause multiple MAC PDUs per UL subframe. Expected behavior: SS correctly transmits data with proper Transmission CS PDU structure.
TP/SS/CDM/MAP/BV-006	Reference: IEEE Std 802.16/Conformance01-2003, Table A.124/Item 1. Initial condition: SS operational, service established between SS and test BS. SS DL PHY mode different than that used by the Frame Control Header. Stimulus: BS sends SS DL data immediately following a minimum length (2 FEC block) Frame Control Header, using the PHY mode different than that used for the Frame Control Header.(i.e., force a PHY mode transition with minimum DL map processing time.) Expected results: SS correctly receives the data.
TP/SS/CDM/MAP/BV-007	Reference: IEEE Std 802.16/Conformance01-2003, Table A.17, IEEE Std 802.16/Conformance01-2003, Table A.122. Initial condition: SS operational in TDD system, service established between SS and test BS. Stimulus: BS transmits DL and UL-MAPs that vary the end of the DL subframe and the start of the UL subframe, varying the placement of DL data to the SS and UL allocations for the SS (without violating the half-duplex nature of the TDD SS). Expected results: SS correctly receives DL data and correctly transmits UL data.
TP/SS/CDM/MAP/BV-008	Reference: IEEE Std 802.16/Conformance01-2003, Table A.47, IEEE Std 802.16/Conformance01-2003, Table A.49. Initial condition: SS operational, service established between SS and test BS. Multiple DL PHY modes, more robust than that currently used by the SS, are defined in the DCD message. Stimulus: BS sends data to SS in a single frame containing MAC PDU(s) at the SS's negotiated DL PHY mode and MAC PDU(s) at each of the more robust PHY modes. Expected results: The SS receives all PDUs at its negotiated DL PHY mode and all more robust DL PHY modes.
TP/SS/CDM/MAP/BV-009	Reference: IEEE Std 802.16/Conformance01-2003, Table A.123. Initial condition: A connection is setup between the test BS and the SS. The test BS requests the SS to receive a single burst immediately after the downlink map in the TDM portion of the downlink frame with burst profile parameters t = 4, information block length = 6, no BCC inner code, shortened last codeword, modulation = QPSK. The burst contains a single codeword and there is no uplink transmission nor any uplink map. The attenuator is adjusted for an optimal reception. Stimulus: The BS inserts 10 erroneous bytes in the control portion before applying the BCC and 4 erroneous bytes in the downlink burst. Expected behavior: The SS receives the data correctly.

5.2.1.1.3 Invalid Behavior

Table 7 — Map and Frame Structure – Invalid Behavior

TP/SS/CDM/MAP/BI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.123. Initial condition: SS operational, service established between SS and test BS. Test BS sends the SS bursts containing at least 2 codewords. The PHY mode parameters are t = 8, information block length = 239, no BCC inner code. The burst is filled with MAC PDUs with length = 64 bytes. The attenuator is adjusted for optimal reception. Stimulus: Test BS injects at least 9 erroneous bytes in the first codeword. Expected behavior: SS correctly receives the whole MAC PDUs following the erroneous Transmission CS PDU.

5.2.1.1.4 Inopportune Behavior

Currently no SS BO category tests have been defined for Map and Frame Structure.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.1.1.5 Timer

Table 8 — Map and Frame Structure – Timer

TP/SS/CDM/MAP/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 3. Initial condition: SS synchronized. Stimulus: BS sends DL-MAP messages with a period of 1ms. BS omits DL-MAP for 600 ms. Expected behavior: Check that SS starts scanning for next downlink channel.
TP/SS/CDM/MAP/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 4. Initial condition: SS synchronized and UL parameters established. Stimulus: BS sends DL-MAP but omits UL-MAP for 600 ms. BS sends a UL-MAP with a grant to the SS. Expected behavior: Check that SS does not transmit.

5.2.1.1.6 Message Formats

For all TP/SS/CDM/MAP tests ensure that messages transmitted by the SS contain the correct parameters in the correct order.

5.2.1.2 Channel Descriptors

5.2.1.2.1 Capabilities

Table 9 — Channel Descriptors - Capabilities

TP/SS/CDM/CD/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.21/Items 1 and 2, IEEE Std 802.16/Conformance01-2003, Table A.47, IEEE Std 802.16/Conformance01-2003, Table A.48, IEEE Std 802.16/Conformance01-2003, Table A.103, IEEE Std 802.16/Conformance01-2003, Table A.104. Initial condition: SS scanning for downlink channel. Stimulus: BS sends DL-MAP messages with a period of 1 ms. BS sends a DCD message within 10 s. Expected behavior: Check that DCD message is received correctly and that downlink PHY parameters are established correctly.
TP/SS/CDM/CD/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.22/Item 1, IEEE Std 802.16/Conformance01-2003, Table A.45, IEEE Std 802.16/Conformance01-2003, Table A.46, IEEE Std 802.16/Conformance01-2003, Table A.101, IEEE Std 802.16/Conformance01-2003, Table A.102. Initial condition: SS synchronized downlink channel. Stimulus: BS sends DL-MAP and UL-MAP with a period of 1 ms. BS sends a UCD message within 10 s. Expected behavior: Check that UCD message is received correctly and that downlink PHY parameters are established correctly.

5.2.1.2.2 Valid Behavior

Currently no SS BV category tests have been defined for Channel Descriptors.

5.2.1.2.3 Invalid Behavior

Currently no SS BI category tests have been defined for Channel Descriptors.

5.2.1.2.4 Inopportune Behavior

Currently no SS BO category tests have been defined for Channel Descriptors.

Documents
Document Sharing Hub
Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.1.2.5 Timer

Table 10 — Channel Descriptors – Timer

TP/SS/CDM/CD/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 16. Initial condition: SS synchronized. Stimulus: BS sends DL-MAP messages with a period of 1ms. BS does not send any DCD message. Expected behavior: Check that SS starts scanning for next downlink channel after 50 s.
TP/SS/CDM/CD/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 25. Initial condition: SS synchronized and UL parameters established Stimulus: BS sends UL-MAP messages containing grants with a period of 1ms. BS does not send any UCD message. Expected behavior: Check that SS ceases to transmit after 50 s.

5.2.1.2.6 Message Formats

For all TP/SS/CDM/CDC tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

5.2.1.3 Channel Descriptor Change

5.2.1.3.1 Capabilities

Table 11 — Channel Descriptor Change – Capabilities

TP/SS/CDM/CDC/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.31/Item 1. Initial condition: SS operational. Stimulus: SS receives DCD message with increments Configuration Change Count twice. Subsequently the SS receives a DL-MAP with DCD Count equal to the old Configuration Change Count. BS is stimulated to send data using each burst profile. Expected behavior: SS receives data correctly with old profile.
TP/SS/CDM/CDC/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.31/Item 1. Initial condition: SS operational. Stimulus: SS receives UCD message with increments Configuration Change Count twice. Subsequently the SS receives a UL-MAP with UCD Count equal to the old Configuration Change Count. This UL-MAP shall have grants using each burst profile. Expected behavior: SS sends correctly data using the old set of burst profiles.
TP/SS/CDM/CDC/CA-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.31/Items 1, 2, and 4. Initial condition: SS has received UCD with increments Configuration Change Count at least twice. Stimulus: BS sends UL-MAP with UCD Count corresponding to the new Configuration Change Count with grants. This UL-MAP shall have grants using each burst profile. Expected behavior: SS sends correctly data using the new set of burst profiles.
TP/SS/CDM/CDC/CA-003	Reference: IEEE Std 802.16/Conformance01-2003, Table A.31/Items 1, 3, and 5. Initial condition: SS has received DCD with increments Configuration Change Count at least twice. Stimulus: BS sends DL-MAP with DCD Count corresponding to the new Configuration Change Count. BS is stimulated to send data using each burst profile. Expected behavior: SS receives data correctly with new profile.

5.2.1.3.2 Valid Behavior

Currently no SS BV category tests have been defined for Channel Descriptor Change.

5.2.1.3.3 Invalid Behavior

Currently no SS BI category tests have been defined for Channel Descriptor Change.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.1.3.4 Inopportune Behavior

Currently no SS BO category tests have been defined for Channel Descriptor Change.

5.2.1.3.5 Timer

Currently no SS TI category tests have been defined for Channel Descriptor Change.

5.2.1.3.6 Message Formats

For all TP/SS/CDM/CDC tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

5.2.2 Radio Link Control – SS

5.2.2.1 Initial Ranging

5.2.2.1.1 Capabilities

Table 12 — Initial Ranging – Capabilities

TP/SS/RLC/IRNG/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Items 1–3 Initial condition: SS synchronized with UL and DL parameters established Stimulus: BS sends UL-MAP message containing 2^**Ranging Backoff Start** Initial Maintenance IEs. Expected behavior: SS sends properly formatted RNG-REQ within one of the indicated intervals.
TP/SS/RLC/IRNG/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Items 4, 5, 6, and 9 Initial condition: SS waiting for RNG-RSP Stimulus: BS sends RNG-RSP with status ≠ Abort Expected behavior: SS establishes Basic and Primary Management CID. SS applies timing and power corrections and sends RNG-REQ with corrected timing and power on the Basic connection in invited station maintenance slot.

5.2.2.1.2 Valid Behavior

Table 13 — Initial Ranging – Valid Behavior

TP/SS/RLC/IRNG/BV-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Item 8. Initial condition: SS waiting for RNG-RSP. Stimulus: BS sends RNG-RSP with status = Abort containing DL-Frequency Override Parameter. Expected behavior: SS moves to frequency designated in RNG-RSP and starts Initial Ranging on said channel.
TP/SS/RLC/IRNG/BV-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23. Initial condition: SS waiting for RNG-RSP. Stimulus: BS sends RNG-RSP with status = Abort not containing a DL-Frequency Override. Expected behavior: SS resets MAC and start scanning for DL-Channel.
TP/SS/RLC/IRNG/BV-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Item 2. Initial condition: SS waiting for RNG-RSP. Stimulus: BS sends RNG-RSP with status ≠ Abort and asks for unreasonable power and timing adjustments. BS sends UL-MAP(s) message containing 2^**Ranging Backoff End** Initial Maintenance IEs. Expected behavior: SS sends properly formatted RNG-REQ within one of the indicated intervals with Ranging Anomalies correctly indicated.

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.1.3 Invalid Behavior

Table 14 — Initial Ranging – Invalid Behavior

TP/SS/RLC/IRNG/BI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23. Initial condition: SS waits for RNG-RSP on CID 0 x 0000. Stimulus: SS receives invalid RNG-RSP with correct CID and MAC address. Expected behavior: Check that IUT restarts Initial Ranging.
TP/SS/RLC/IRNG/BI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23. Initial condition: SS waits for RNG-RSP on Basic CID. Stimulus: SS receives invalid RNG-RSP with correct CID and MAC address. Expected behavior: Check that IUT awaits another Station Maintenance Interval.

5.2.2.1.4 Inopportune Behavior

Table 15 — Initial Ranging – Inopportune Behavior

TP/SS/RLC/IRNG/BO-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23. Initial condition: SS waits for RNG-RSP on Basic CID. Stimulus: SS receives a valid RNG-RSP with correct MAC address but on CID 0 x 0000. Expected behavior: Check that IUT ignores the RNG-RSP and awaits a Station Maintenance Interval.

5.2.2.1.5 Timer

Table 16 — Initial Ranging – Timer

TP/SS/RLC/IRNG/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 5. Initial condition: SS waiting for RNG-RSP. Retry counter set to **Contention Ranging Retries**. Stimulus: T3 Expires. Expected behavior: SS resets MAC and start scanning for DL-Channel.
TP/SS/RLC/IRNG/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Item 2, IEEE Std 802.16/Conformance01-2003, Table A.96/Item 5. Initial condition: SS waiting for RNG-RSP. Retry counter set to < **Contention Ranging Retries**. **Ranging Backoff Start< Ranging Backoff End**. Stimulus: T3 timed out. BS sends UL-MAP(s) message containing 2^**Ranging Backoff End** Initial Maintenance IEs. Expected behavior: SS sends properly formatted RNG-REQ within one of the indicated intervals with increased power. SS increases back-off window.
TP/SS/RLC/IRNG/TI-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.23/Item 2, IEEE Std 802.16/Conformance01-2003, Table A.96/Item 5. Initial condition: SS waiting for RNG-RSP. Retry counter set to < **Contention Ranging Retries**. SS at maximum power. Stimulus: T3 timed out. BS sends UL-MAP(s) message containing 2^**Ranging Backoff End** Initial Maintenance IEs. Expected behavior: SS sends properly formatted RNG-REQ within one of the indicated intervals with minimum power.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.1.6 Message Formats

For all TP/SS/RLC/IRNG tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

5.2.2.2 Periodic Ranging

5.2.2.2.1 Capabilities

Table 17 — Periodic Ranging – Capabilities

TP/SS/RLC/PRNG/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 3. Initial condition: SS has completed Initial Ranging successfully. SS Tx power not at max or min limit. RNG-RSP power change request does not exceed limits. Stimulus: SS receives RNG-RSP message to change power level, status = success. Expected behavior: SS raises or lowers power as requested.
TP/SS/RLC/PRNG/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 3. Initial condition: SS has completed Initial Ranging successfully. SS Tx power not at max or min limit. RNG-RSP power change request does not exceed limits. Stimulus: SS receives RNG-RSP message to change timing advance, status = success. Expected behavior: SS changes timing as requested. Subsequent transmissions with corrected timing.

5.2.2.2.2 Valid Behavior

Table 18 — Periodic Ranging – Valid Behavior

TP/SS/RLC/PRNG/BV-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 3. Initial condition: SS has completed Initial Ranging successfully. SS Tx power not at max or min limit. RNG-RSP power change request does not exceed limits. Stimulus: SS receives RNG-RSP message to change power level, status = continue. Expected behavior: SS raises or lowers power as requested and sends REG-REQ.
TP/SS/RLC/PRNG/BV-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 3. Initial condition: SS has completed Initial Ranging successfully. SS Tx power not at max or min limit. RNG-RSP power change request does not exceed limits. Stimulus: SS receives RNG-RSP message to change timing advance, status = continue. Expected behavior: SS changes timing as requested. Subsequent transmissions with corrected timing and sends REG-REQ.
TP/SS/RLC/PRNG/BV-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30. Initial condition: SS has completed Initial Ranging successfully. Stimulus: SS receives RNG-RSP message to change timing advance, status = abort. Expected behavior: SS re initializes and looks for another channel.
TP/SS/RLC/PRNG/BV-003	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 2. Initial condition: SS has completed Initial Ranging successfully. Stimulus: SS receives RNG-RSP message to change timing advance, status = re-range. Expected behavior: SS reverts to initial ranging using Initial Maintenance IEs.
TP/SS/RLC/PRNG/BV-004	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 4. Initial condition: SS has completed Initial Ranging successfully. SS Tx power at or near max limit. Stimulus: SS receives RNG-RSP message to change power level higher than limit, status = success. Expected behavior: SS raises power to its max limit and sends REG-REQ stating anomalies.
TP/SS/RLC/PRNG/BV-005	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 4. Initial condition: SS has completed Initial Ranging successfully. SS Tx power at or near min limit. Stimulus: SS receives RNG-RSP message to change power level below limit, status = continue. Expected behavior: SS lowers power to limit and sends REG-REQ stating anomalies.

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.2.3 Invalid Behavior

Table 19 — Periodic Ranging – Invalid Behavior

TP/SS/RLC/PRNG/BI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30, IEEE Std 802.16/Conformance01-2003, Table A.52, IEEE Std 802.16/Conformance01-2003, Table A.106. Initial condition: SS has completed Initial Ranging successfully. Stimulus: SS receives an invalid RNG-RSP. Expected behavior: SS ignores the message.

5.2.2.2.4 Inopportune Behavior

Since the RNG-RSP message may be sent unsolicited, there are no SS Periodic Ranging inopportune behavior tests.

5.2.2.2.5 Timer

Table 20 — Periodic Ranging – Timer

TP/SS/RLC/PRNG/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 18. Initial condition: SS has completed Initial Ranging successfully. SS waiting for RNG-RSP. Retry counter set to **Contention Ranging Retries**. Stimulus: T3 Expires. Expected behavior: SS resets MAC and start scanning for DL-Channel.
TP/SS/RLC/PRNG/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 18, IEEE Std 802.16/Conformance01-2003, Table A.30/Item 3. Initial condition: SS has completed Initial Ranging successfully. SS waiting for RNG-RSP. Retry counter < **Contention Ranging Retries**. Stimulus: T3 timed out. BS allocates bandwidth to the SS. Expected behavior: SS resends RNG-REQ message.
TP/SS/RLC/PRNG/TI-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.96/Item 19, IEEE Std 802.16/Conformance01-2003, Table A.30/Item 1. Initial condition: SS has completed Initial Ranging successfully. SS awaiting ranging opportunity (bandwidth allocation). Stimulus: T4 timed out. Expected behavior: SS resets MAC and start scanning for DL-Channel.

5.2.2.2.6 Message Formats

For all TP/SS/RLC/PRNG tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.3 Downlink Burst Profile Management

5.2.2.3.1 Capabilities

Table 21 — Downlink Burst Profile Management – Capabilities

TP/SS/RLC/DBPC/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 4. Initial condition: SS operational at DIUC n. Stimulus: SS received signal S/N goes below threshold for change to more robust DIUC k. Expected behavior: Upon receiving next grant the IUT sends a DBPC-REQ for DIUC k.
TP/SS/RLC/DBPC/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 4 Initial condition: SS operational at DIUC n. Operation at less robust DIUC k is allowed. Stimulus: SS received signal S/N goes above threshold for change to less robust DIUC k. Expected behavior: The IUT sends a DBPC-REQ for DIUC k.

5.2.2.3.2 Valid Behavior

Table 22 — Downlink Burst Profile Management – Valid Behavior

TP/SS/RLC/DBPC/BV-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 4. Initial condition: SS operational at DIUC n, but has sent request to move to more robust DIUC k. Stimulus: BS sends data/management message to SS using DIUC n before sending the DBPC-RSP message. Expected behavior: SS receives the data/message on DIUC n.
TP/SS/RLC/DBPC/BV-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30, IEEE Std 802.16/Conformance01-2003, Table A.30. Initial condition: SS operational at DIUC n. Operation at less robust DIUC k is not allowed. Stimulus: SS received signal S/N goes above threshold for change to less robust DIUC k. Expected behavior: IUT refrains from sending a DBPC-REQ for DIUC k.
TP/SS/RLC/DBPC/BV-002	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30/Item 6. Initial condition: SS has sent request to move to less robust DIUC k. Stimulus: BS sends data/ messages using DIUC k after sending DBPC-RSP using DIUC n in the same DL- frame. Expected behavior: SS receives the data/message sent at DIUC k correctly.

5.2.2.3.3 Invalid Behavior

Table 23 — Downlink Burst Profile Management – Invalid Behavior

TP/SS/RLC/DBPC/BI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.84/Item 1. Initial Condition: BS has received DBPC-REQ from SS. Stimulus: BS transmits to the SS an erroneous DBPC-RSP message. Expected Behavior: The SS ignores the message.

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Documents
Document Sharing Hub

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.3.4 Inopportune Behavior

Table 24 — Downlink Burst Profile Management – Inopportune Behavior

TP/SS/RLC/DBPC/BO-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30. Initial Condition: SS has completed initial ranging. Stimulus: SS receives an unsolicited DBPC-RSP. (RNG-RSP may come unsolicited, but DBPC-RSP may not). Expected Behavior: SS ignores the message. Reporting the error to the management plane is allowed.

5.2.2.3.5 Timer

Table 25 — Downlink Burst Profile Management – Timer

TP/SS/RLC/DBPC/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30. Initial Condition: SS has transmitted a DBPC-REQ message to the BS. Stimulus: SS does not receive a DBPC-RSP message from the BS within timeout specified by the SS equipment manufacturer. Expected Behavior: SS resends the DBPC-REQ message.
TP/SS/RLC/DBPC/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.30. Initial Condition: SS has re-transmitted a DBPC-REQ message to the BS. Stimulus: SS continues to not receive a DBPC-RSP message from the BS within timeout specified by the SS equipment manufacturer. Expected Behavior: SS resends the DBPC-REQ message indefinitely.

5.2.2.3.6 Message Formats

For all TP/SS/RLC/DBPC tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

5.2.2.4 Negotiate Basic Capabilities – SS

5.2.2.4.1 Capabilities

Table 26 — Negotiate Basic Capabilities

TP/SS/RLC/SBC/CA-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24/Item 1 Initial condition: Initial ranging performed. Stimulus: SS granted bandwidth. Expected behavior: SS sends SBC-REQ listing its capabilities.
TP/BS/RLC/SBC/CA-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24/Item 2 Initial condition: Waiting for SBC-RSP. Stimulus: SS receives SBC-RSP with no parameter restrictions. Expected behavior: SS continues to Authentication.

Copyright © 2004 IEEE. All rights reserved.
Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...

5.2.2.4.2 Valid Behavior

Table 27 — Negotiate Basic Capabilities– Valid Behavior

TP/BS/RLC/SBC/BV-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24/Item 2. Initial condition: Waiting for SBC-RSP. Stimulus: SS receives SBC-RSP with further parameter restrictions. Expected behavior: SS restricts capabilities as commanded in SBC-RSP.

5.2.2.4.3 Invalid Behavior

Table 28 — Negotiate Basic Capabilities– Invalid Behavior

TP/SS/RLC/SBC/BI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.87. Initial condition: SS waiting for SBC-RSP retries not exhausted. Stimulus: SS receives invalid SBC-RSP. Expected behavior: Check that SS retransmits SBC-REQ at earliest possible opportunity.
TP/SS/RLC/SBC/BI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.87. Initial condition: SS waiting for SBC-RSP, retries exhausted. Stimulus: SS receives invalid SBC-RSP. Expected behavior: Check that IUT resets and starts over.

5.2.2.4.4 Inopportune Behavior

Table 29 — Negotiate Basic Capabilities – Inopportune Behavior

TP/SS/RLC/SBC/BO-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24. Initial condition: SS has finished Basic Capability Negotiation. Stimulus: SS receives extra SBC-RSP. Expected behavior: Check that IUT ignores the message.

5.2.2.4.5 Timer

Table 30 — Negotiate Basic Capabilities – Timer

TP/SS/RLC/SBC/TI-000	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24/Item 3. Initial condition: SS waiting for SBC-RSP retries not exhausted. Stimulus: T18 expires. Expected behavior: After timer expires SS retransmits SBC-REQ when receiving UL-grant.
TP/SS/RLC/SBC/TI-001	Reference: IEEE Std 802.16/Conformance01-2003, Table A.24/Item 3. Initial condition: SS waiting for SBC-RSP, retries exhausted. Stimulus: T18 expires. Expected behavior: Check that IUT resets and starts over.

5.2.2.4.6 Message Formats

For all TP/SS/RLC/SBC tests ensure that messages transmitted by the SS contain the correct parameters in the correct order per Clause 12 of IEEE 802.16.

Documents
Document Sharing Hub

Copyright © 2004 IEEE. All rights reserved.

Authorized licensed use limited to: Tsinghua University. Downloaded on February 26,2026 at 01:56:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: 802.16 - IEEE Standard for Conformance to IEEE Standard 802.16 - Part 2: Test Suite Structure and Test Purposes (TSS&TP) for 10-66...