



# MultiPlay

Playback Compatibility Specification  
for  
CD and DVD Consumer Devices

Revision 1.1

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## POINTS OF CONTACT

<p><b><u>OSTA</u></b> Ray Freeman OSTA Facilitator</p> <p>311 East Carrillo Street Santa Barbara, CA 93101</p> <p>Tel: +1 805 963 3853 Fax: +1 805 962 1541 Email: ray@osta.org <a href="http://www.osta.org">www.osta.org</a></p>	<p><b><u>Technical Content</u></b> Felix Nemirovsky Chairman, MultiRead Subcommittee</p> <p>Oak Technology, Inc. 139 Kifer Court Sunnyvale, CA 94086</p> <p>Tel: +1 415 643 0944 Fax: +1 520 299 4319 Email: felixn@oaktech.com</p>
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### ABSTRACT

This specification defines the read-compatibility requirements for a MultiPlay compliant device. The applicable clauses of the specification containing the word “**shall**” are the requirements to be MultiPlay compliant. Annexes may be part of this document but are not required for compliance.

### LICENSING

Application of this specification does not require a license. However, CD disc and CD equipment products are known to require a license from Philips Consumer Electronics B.V. DVD disc and DVD equipment products are known to require a license from the DVD Forum.

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# Contents

<b>1</b>	<b>General</b>	<b>1</b>
1.1	Purpose . . . . .	1
1.2	Related Documents . . . . .	1
1.3	Computer Terminology . . . . .	2
1.4	Terms . . . . .	2
1.5	Scope . . . . .	3
<b>2</b>	<b>MultiPlay + Red Book Audio</b>	<b>5</b>
2.1	Test Disc Specification . . . . .	5
2.2	Test Plan . . . . .	5
2.3	Pass or Fail Criteria . . . . .	6
<b>3</b>	<b>MultiPlay + CD-Text</b>	<b>7</b>
3.1	Test Disc Specification . . . . .	7
3.2	Test Plan . . . . .	7
3.3	Pass or Fail Criteria . . . . .	8
<b>4</b>	<b>MultiPlay + Slideshow</b>	<b>9</b>
4.1	Test Disc Specification . . . . .	9
4.2	Test Plan . . . . .	9
4.3	Pass or Fail Criteria . . . . .	10
<b>5</b>	<b>MultiPlay + VideoCD</b>	<b>11</b>
5.1	Test Disc Specification . . . . .	11
5.2	Test Plan . . . . .	11
5.3	Pass or Fail Criteria . . . . .	11
<b>6</b>	<b>RevisionHistory</b>	<b>13</b>
6.1	1.04 → 1.10 (July 11, 2001) . . . . .	13
6.2	1.00 → 1.04 (June 15, 2001) . . . . .	13
6.3	1.00 (December 4, 2000) . . . . .	13
	<b>Index</b>	<b>15</b>



# 1 General

## 1.1 Purpose

The purpose of this document is to specify the read and/or play compatibility requirements for a MultiPlay compliant consumer electronic device. It is intended as a specification for CD and DVD device manufacturers, personal computer manufacturers and operating system software developers. MultiPlay defines the requirements that shall be met for a device to read and/or play all the following types of media: CD-R and CD-RW.

This specification describes the complete device requirements of the MultiPlay Specification and Test Plan. It covers the physical requirements for a MultiPlay compliant device.

The MultiPlay Test Plan for MultiPlay compliant devices applies only to the actions or features in the MultiPlay Specification that are indicated by the word “**shall**.” This test plan document expresses what shall be tested, and all of its sections are mandatory. These tests shall be performed with test discs specially designed according to this test plan.

## 1.2 Related Documents

Other industry standards and specifications were reviewed and consulted in the development of this specification. They are directly related to CD-DA, VideoCD, CD-Text, CD-R, and CD-RW. These documents include:

**IEC 60908 Ed.2.0 b.1999** Audio Recording - Compact disc digital audio system

**ISO 9660:1988** Information Processing - Volume and File Structure of CD-ROM for Information Interchange on read-only 120mm optical data discs (CD-ROM)

**ISO/IEC 10149:1995** Information Technology – Data Interchange on read-only 120mm optical data discs (CD-ROM)

**Orange Book Part–II** Recordable Compact Disc System Part II, Philips and Sony Corp., Version 2.0 or higher

**Orange Book Part–III** ReWritable Compact Disc System Part III, Philips and Sony Corp., Version 1.0 or higher

**Sony/Philips Color Books** VideoCD Standard

**Sony/Philips Color Books** CD-Text Standard

### 1.3 Computer Terminology

**Digital Versatile Disc (DVD)** - Generic class of devices based on 120mm discs, using 8 to 16 Modulation, having a track pitch of 0.74 or 0.80 um, with a multiple gigabyte capacity.

**Dolby Digital** - A coding system for audio. It is the most common means of encoding audio for DVD-Video.

**DVD-Video** - A format for storing video on a disc. It is based on MPEG video, Dolby Digital and MPEG audio.

**Moving Picture Expert Group (MPEG)** - A committee that developed the MPEG family of audio and video compression systems.

**MPEG audio** - Audio compressed according to the MPEG perceptual encoding system.

**MPEG-2** - Audio with data to provide discrete multi-channel audio.

**MPEG video** - Video compressed according to the MPEG perceptual encoding system.

**MPEG-2** - Video used for higher-quality video.

### 1.4 Terms

**May** - Indicates an action or feature that is optional.

**Optional** - Describes a feature that may or may not be implemented. If implemented, the feature will be implemented as described.

**Shall** - Indicates an action or feature that is mandatory and shall be implemented in a device that is claimed to be in compliance with this specification.

**Should** - Indicates an action or feature that is optional but its implementation is strongly recommended. or higher Applies to version of standards, specification or documents that include a version number. It implicitly applies to any version number. New versions that conflict with older versions are exceptions that would require an update of this MultiPlay Specification.

**Device** - For the purposes of this document the word “device” is used interchangeably with “drive” and “player.”

**Drive** - Product that is internally or externally connected to a computer system.

**Player** - Standalone or connected product that allows the playback of audio and/or video.

**Selection** - A segment of playable content (audio, video, still picture).

**Title** - Refers to text information about the playable selection.

**Version** - Indicates a change to the document.

## 1.5 Scope

This document specifies the read and/or play compatibility requirements of a MultiPlay compliant consumer electronic device and states the Test Plan for its verification. MultiPlay defines the requirements that **shall** be met for a device to read and/or play all the following types of media: CD-R and CD-RW.

A MultiPlay device **shall** play back Red Book Audio recorded on CD-R and CD-RW media.

A MultiPlay device that supports CD-Text capability **shall** be capable of playing and displaying CD-Text information recorded on CD-R and CD-RW media.

A MultiPlay device that supports VideoCD capability **shall** be capable of playing VideoCD information recorded on CD-R and CD-RW media.

Examples of MultiPlay Compliance:

	MultiPlay
CD-R Disc	YES
CD-RW Disc	YES

YES – A MultiPlay compliant device **shall** be able to read this media type.





## 2 MultiPlay + Red Book Audio

This test **shall** be performed twice, once using a CD-R test disc and once using a CD-RW test disc. The MultiPlay + Red Book Audio test **shall** be considered successful only if all six test steps pass for each disc.

### 2.1 Test Disc Specification

With the use of Red Book Audio-formatted content that is recorded on CD-R and CD-RW discs, five tracks shall be tested. Each track shall contain a spoken phrase in English with a minimum duration of 4 seconds and a maximum duration of 30 seconds. The phrase is noted in quotation marks below.

Track Number	Track Content
01	“Now playing first track, now playing first track, ...”
02	“Now playing second track, now playing second track, ...”
03	“Now playing third track, now playing third track, ...”
04	“Now playing fourth track, now playing fourth track, ...”
05	“Now playing fifth track, now playing fifth track, ...”

### 2.2 Test Plan

	Action	Expected Result	Pass/Fail
1	Check the test disc type.	CD-R _____ CD-RW _____	
2	Load the MultiPlay + Audio/CD-Text Test Disc into the consumer electronic player. If the device starts to play, press the Stop button. <sup>1</sup>	The device <b>shall</b> accept the disc and become ready to play the first track	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
3	Press the Play button to start the first track playing.	The device <b>shall</b> play the first track. The track will contain “Now playing first track, now playing first track...” etc.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
4	Press the Skip track button to move to the next track.	The device <b>shall</b> play the second track. The track will contain “Now playing second track, Now playing second track...” etc.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
5	Press the Skip track button three times to move to the fifth track.	The device <b>shall</b> play the fifth and last track. The track will contain “Now playing fifth track, Now playing fifth track...” etc.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>

6	Press the Skip track button again.	The device <b>shall</b> continue to play the fifth track.	<b>P</b> <input type="checkbox"/>	<b>F</b> <input type="checkbox"/>
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1. Some devices will automatically recognize the disc and start playing. To initiate this test plan, the disc shall be played from a stop position.

**Note:** *Audio quality will not be judged by this test. The recording of each track shall be understandable, however.*

### 2.3 Pass or Fail Criteria

This test plan **shall** be performed two times, once with a CD-R written test disc and once with a CD-RW written test disc. The MultiPlay test **shall** be considered successful only if all six test steps pass for both CD-R and CD-RW test discs.

### 3 MultiPlay + CD-Text

This test **shall** be performed twice, once using a CD-R test disc and once using a CD-RW test disc. The MultiPlay + CD-Text test **shall** be considered successful only if all six test steps pass for each disc.

#### 3.1 Test Disc Specification

The format of this disc **shall** be Red Book Audio with CD-Text encoded in the lead-in written on CD-R and CD-RW media. The content of the disc **shall** be exactly the same as the content of the MultiPlay + Red Book Audio test disc with the following additions:

Album Name:	MultiPlay + CD-Text		
Author Name:	OSTA MultiRead Subcommittee		
First Track Title:	First Track	Author:	OSTA One
Second Track Title:	Second Track	Author:	OSTA Two
Third Track Title:	Third Track	Author:	OSTA Three
Fourth Track Title:	Fourth Track	Author:	OSTA Four
Fifth Track Title:	Fifth Track	Author:	OSTA Five

#### 3.2 Test Plan

	Action	Expected Result	Pass/Fail				
1	Check the test disc type.	CD-R _____ CD-RW _____					
2	Load the MultiPlay + Audio/CD-Text Test Disc into the consumer electronic player. If the device starts to play, press the Stop button. <sup>1</sup>	The device <b>shall</b> accept the disc and become ready to play the first track. The Album name of the disc <b>shall</b> read “Multiplay + CD-Text” and the Author name <b>shall</b> read “OSTA MultiRead Subcommittee”.	<table> <tr> <td><b>P</b></td> <td><b>F</b></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						
3	Press the Play button to start the first track playing.	The device <b>shall</b> play the first track. The track will contain “Now playing first track, now playing first track...” etc. The device <b>shall</b> display “First Track” for the title of the track, and “OSTA One” for the author of the track.	<table> <tr> <td><b>P</b></td> <td><b>F</b></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						

4	Press the Skip track button to move to the next track.	The device <b>shall</b> play the second track. The track will contain “Now playing second track, Now playing second track...” etc. The device <b>shall</b> display “Second Track” for the title of the track, and “OSTA Two” for the author of the track.	<table style="border: none;"> <tr> <td style="text-align: center;"><b>P</b></td> <td style="text-align: center;"><b>F</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						
5	Press the Skip track button three times to move to the fifth track.	The device <b>shall</b> play the fifth and last track. The track will contain “Now playing fifth track, Now playing fifth track...” etc. The device <b>shall</b> display “Fifth Track” for the title of the track, and “OSTA Five” for the author of the track.	<table style="border: none;"> <tr> <td style="text-align: center;"><b>P</b></td> <td style="text-align: center;"><b>F</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						
6	Press the Skip track button again.	The device <b>shall</b> continue to play the fifth track. The device <b>shall</b> display “Fifth Track” for the title of the track, and “OSTA Five” for the author of the track.	<table style="border: none;"> <tr> <td style="text-align: center;"><b>P</b></td> <td style="text-align: center;"><b>F</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						

1. Some devices will automatically recognize the disc and start playing. To initiate this test plan, the disc shall be played from a stop position.

### 3.3 Pass or Fail Criteria

This test **shall** be performed two times, once with a CD-R written test disc and once with a CD-RW written test disc. The MultiPlay + CD-Text test **shall** be considered successful only if all six test steps pass for both CD-R and CD-RW test discs. All Album Title, Track Title and Track Author text **shall** be displayed correctly.

## 4 MultiPlay + Slideshow

This test **shall** be performed twice, once using a CD-R test disc and once using a CD-RW test disc. The MultiPlay + Slideshow test **shall** be considered successful only if all eight test steps pass for each disc.

### 4.1 Test Disc Specification

The format of this disc **shall** be VideoCD 2.0 written on CD-R and CD-RW media. The contents of this disc consists of 32 still image pictures from a JPG or BMP source file and one video sequence consisting of all of the still images in sequence with a delay of 8 seconds between each image. The first 8 seconds of each image in the slideshow video sequence are marked with the image number and filename. There will be two menu pages of thumbnails which display 16 images on each menu page. Each menu allows for the selection of an individual still image or the entire slideshow in sequence.

### 4.2 Test Plan

	Action	Expected Result	Pass/Fail
1	Check the test disc type.	CD-R _____ CD-RW _____	
2	Load the MultiPlay + Slideshow Test Disc into the consumer electronic player. If the device starts to play automatically, press the Return button to go back to the menu. 1	The device <b>shall</b> accept the disc and become ready to play. The device should display the Page 1 Thumbnail Menu correctly.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
3	Press the Next Picture button to go to the Page 2 menu.	The device <b>shall</b> play the second Thumbnail Menu page.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
4	Press the numbers 17 on the device controller.	The device <b>shall</b> play the slideshow movie. This is each picture from the thumbnails in order. Each picture should display for approximately 5 seconds and the picture number and picture name should display for approximately 2 seconds.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
5	Press the Return button on the device controller.	The device <b>shall</b> stop playback and return to the Thumbnail menu page 1.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
6	Press a specific picture number.	The device <b>shall</b> display that selection.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>

7	Press the Next Picture button.	The device <b>shall</b> play the selection immediately following the selection that you picked in the previous step.	<table border="0"> <tr> <td style="text-align: center;"><b>P</b></td> <td style="text-align: center;"><b>F</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						
8	Press the Previous Picture button.	The device <b>shall</b> play the selection originally picked in the step 6.	<table border="0"> <tr> <td style="text-align: center;"><b>P</b></td> <td style="text-align: center;"><b>F</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	<b>P</b>	<b>F</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>P</b>	<b>F</b>						
<input type="checkbox"/>	<input type="checkbox"/>						

1. Some devices will automatically recognize the disc and start playing. To initiate this test plan, the disc shall be played from a Page 1 Thumbnail Menu position.

### 4.3 Pass or Fail Criteria

This test **shall** be performed two times, once with a CD-R and once with a CD-RW test disc. The MultiPlay + Slideshow test **shall** be considered successful only if all eight test steps pass for both CD-R and CD-RW test discs.

## 5 MultiPlay + VideoCD

This test **shall** be performed twice, once using a CD-R test disc and once using a CD-RW test disc. The MultiPlay + VideoCD test **shall** be considered successful only if all five test steps pass for each disc.

### 5.1 Test Disc Specification

The format of a test disc shall be VideoCD v1.1 written on CD-R or CD-RW media. The content of this disc consists of movies. These discs are fully compliant with the VideoCD v1.1 specification.

The VideoCD Movie disc will consist of 5 MPEG-1 compressed video tracks.

### 5.2 Test Plan

	Action	Expected Result	Pass/Fail
1	Check the test disc type.	CD-R _____ CD-RW _____	
2	Load the MultiPlay + VideoCD Test Disc into the consumer electronic player. If the device starts to play, press the Stop button. <sup>1</sup>	The device <b>shall</b> accept the disc and become ready to play the first selection.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
3	Press the Play button.	The device <b>shall</b> start playing the selection continuously from first to last.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
4	Press the Next button to go to next selection.	The device <b>shall</b> automatically start playing the next selection from its beginning.	<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>
5	Repeat step 3 for all the remaining selections.		<b>P</b> <b>F</b> <input type="checkbox"/> <input type="checkbox"/>

1. Some devices will automatically recognize the disc and start playing. To initiate this test plan, the disc shall be played from a stop position.

### 5.3 Pass or Fail Criteria

This test **shall** be performed twice, once using a CD-R test disc and once using a CD-RW test disc. The MultiPlay + VideoCD test **shall** be considered successful only if all five test

steps pass for both CD-R and CD-RW test discs. All selections **shall** be viewable on the display.



## 6 RevisionHistory

### 6.1 1.04 → 1.10 (July 11, 2001)

- Typographical errors were fixed.
- Index was added to the document.
- Revision history was added to the document.

### 6.2 1.00 → 1.04 (June 15, 2001)

- Test sheets were incorporated into the document.
- The document was reformatted

### 6.3 1.00 (December 4, 2000)

- First version of the document.



# Index

CD, 1

CD-R, 1, 3, 5, 7, 9, 11

CD-RW, 1, 3, 5, 7, 9, 11

CD-Text, 3, 7

DVD, 1, 2

image

    BMP, 9

    JPG, 9

    still, 9

menu

    thumbnail, 9

MPEG, 2

Red Book Audio, 3, 5, 7

Slideshow, 9

track, 5

VideoCD, 3, 9, 11