



**Playback Compatibility Specification
for
CD and DVD Consumer Devices**

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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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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.

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

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 μm , 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 adds data to provide discrete multi-channel audio.

MPEG video - Video compressed according to the MPEG perceptual encoding system. MPEG-2 video is used for higher-quality video.

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.
<i>Should</i>	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.

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 Audio CD 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.

MultiPlay Test Disc Specification

With the use of Red Book Audio-formatted content that is recorded on CD-R or 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, ...”

MultiPlay Test Plan

Step	Test Action	Test Result
1	Load Test Disc into CD/DVD device (press Stop button if device starts to play). ^{*1}	Device shall accept the disc by becoming ready to play first track.
2	Press Play button to play first track.	Device shall play the first audio track: “Now playing first track,”
3	Press Skip track button to go to the second track.	Device shall play the second audio track: “Now playing second track,”
4	Press Skip track button 3 times to go to the fifth and last track.	Device shall play the fifth and last track: “Now playing fifth track,”
5	Press Skip track button once more.	Device shall continue to play the fifth track.

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

MultiPlay Test 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 five test steps pass for both CD-R and CD-RW test discs.

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

MultiPlay + CD-Text 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 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

MultiPlay + CD-Text Test Plan

Step	Test Action	Test Result
1	Load Test Disc into CD/DVD device (press Stop button if device starts to play). ^{*2}	Device shall recognize the disc by becoming ready to play first track. Device shall display Album Title and Author correctly.
2	Press Play button to play first track.	Device shall play the first track: "Now playing first track," Device shall display Track Title and Track Author correctly.
3	Press Skip Track button to go to the second track.	Device shall play the second track: "Now playing second track," Device shall display Track Title and Track Author correctly.
4	Press Skip Track button 3 times to go to the fifth and last track.	Device shall play the fifth and last track: "Now playing fifth track," Device shall display Track Title and Track Author correctly.
5	Press Skip Track button once more.	Device shall continue to play the fifth track. Device shall display Track Title and Track Author correctly.

² Some devices will automatically recognize the disc and start playing the disc. To initiate this test plan, the disc **shall** be played from a stopped position.

MultiPlay + CD-Text 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 five 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.

MultiPlay + VideoCD Test Disc Specification

The format of these discs **shall** be VideoCD v2.0 written on CD-R or CD-RW media. The content of these discs consists of movies and slide shows. These discs are fully compliant with the VideoCD v2.0 specification but are also playable by devices supporting VideoCD v1.1 specification.

The VideoCD Movie disc will consist of 5 MPEG-1 compressed video tracks and a Title Menu. The Menu will consist of play selections. The selections include:

- Play entire disc continuously (all five videos from first to last)
- Play first selection
- Play second selection
- Play third selection
- Play fourth selection
- Play fifth selection

The VideoCD Slide Show disc will consist of 5 MPEG-1 compressed picture slides and Title Menu. The Menu will consist of playing thumbnail views of all the pictures in the slide show. The selection of the first thumbnail activates the entire slide show from first to last slide. The remaining entries will branch to each slide of the slide show.

MultiPlay + VideoCD Disc Test Plan

Step	Test Action	Test Result
1	Load Test Disc into device (press Stop button if starts playing). ^{*3}	Device shall accept the disc by becoming ready to play first selection. Device <i>should</i> display Disc Title Menu correctly.
2	Press Play button. Alternately, select “play entire disc continuously” selection from the On Screen Menu.	Device shall start playing selection continuously from first to last and then return to the Menu or return to first selection.
3	Press Next button to go to next selection.	Device shall automatically start playing next selection from its beginning.
4	Press Title Menu button at any time.	Device shall stop playing and return to the Title Menu Screen or return to first selection.
5	Press a specific selection number.	Device shall start playing the appropriate selection.

³ Some devices will display a Menu when playing this disc, and others will just play the selections.

MultiPlay + VideoCD Pass or Fail Criteria

This test **shall** be performed four times, using each of the following test discs:

Disc Type	Content
CD-R	VideoCD Movie
CD-RW	VideoCD Movie
CD-R	VideoCD SlideShow
CD-RW	VideoCD SlideShow

The MultiPlay + VideoCD test **shall** be considered successful only if all five test steps pass for each test disc. All selections **shall** be viewable on the display.