



September 2007

# Forms for DVD Format Verification of DVD-Audio Disc

## Form 1H to 10H Version 1.3

*Notice:*

- *These Forms will be revised on occasion for improvement or Version-up of the related Test Specification.*
- *The latest Forms shall be used to fill up the necessary information for application to Verification Lab, according to the related Test Specification.*
- *You can fill up the shaded space in every Form.*
- *"Adobe® Acrobat®" will be necessary for making your own files.*

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*Exemption: None will be liable for any damages from use of this document.*

**Preliminary Information for DVD Format Verification**

Application No. (Lab use) :

Application date (mm. dd, yyyy) :

Lab receipt date (mm. dd, yyyy) :

Lab name :

**DVD-Audio Disc described below is for DVD Format Verification of the First Production Model.**

Name of title	Disc number	Note (Disc details, Sales area etc.)
Remarks:		

**DVD-Audio Disc described above will be applied for DVD Format Verification by the following applicant.**

Name of applicant	
Title of applicant	
Company & Factory name	
Factory address	
Phone number	
Fax number	
E-mail	

Applicant's Signature:

## Test Information of DVD Format Verification (1)

### DVD Format Verification Lab record (Verification Lab use only)

- Name of Verification Lab :
- Name of inspector :
- Application date :
- Date of test completed :
- Verification number :


### Information of applicant

- Applicant's name :
- Company name :
- Company address :
- Phone number :
- Fax number :


### DVD-Audio Disc details

- Brand / Trade name :
- Name of title :
- Disc number :
- Kind of disc : ☐ 12 cm disc ☐ 8 cm disc
- Structure : ☐ Single Sided ☐ Double Sided
- Type of layer : ☐ Single Layer ☐ Dual Layer
  - ☐ Standard ☐ Opposite Track Path (OTP)
  - ☐ Thin ☐ Parallel Track Path (PTP)
- Recording Density : ☐ Standard (4.7 Gbytes/layer) ☐ Low (4.27 Gbytes/layer)
- Type of Video : ☐ 525/60 (NTSC) ☐ 625/50 (PAL) ☐ Others ( )
- Type of contents : ☐ Audio Only ☐ Audio with Video
- Encrypted : ☐ Yes ☐ No
- APS : ☐ Non ☐ AGC ☐ AGC/4line Split Burst ☐ Others ( )
  - ☐ AGC/2line Split Burst

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## Test Information of DVD Format Verification (2)

### Information of Replicator

• Name of Replicator	:	
• Name and Title of Contact Person	:	
Phone	:	
Fax	:	
• Manufacturer and Model No. of Formatter	:	
• Manufacturer and Model No. of Mastering System	:	
• Manufacturer and Model No. of Replication System	:	

### Disc replicator recognition

• Name of Replicator	:	
• Recognition description for all discs	:	

### Information of Authoring Studio

• Name of Authoring Studio	:	
• Name and Title of Contact Person	:	
Phone	:	
Fax	:	
• Manufacturer and Model No. of Authoring Tool	:	
• Manufacturer and Model No. of Video Encoder	:	
• Manufacturer and Model No. of Audio Encoder	:	

## Test results of the Mechanical parameters

Spec.* number	Parameter		Specification	Measurement value		Judgment (Lab use)
				Applicant	Lab	
2.4.2	Outer diameter (D1)	12 cm disc	120.00 $\pm$ 0.30 mm			
		8 cm disc	80.00 $\pm$ 0.30 mm			
2.4.4	Center hole diameter 1 side (D2)		15.00 to 15.15 mm			
2.4.5	Center hole diameter both sides (CHD)		15.00 mm min.			
2.4.6	Edge shape (Edge)		0.1 mm max.			
2.4.7	Thickness of a disc (L1)	R = 25 mm	1.14 to 1.50 mm			
		R = 40 mm				
		R = 56 mm				
2.4.11	Thickness in clamping area (L2)		1.10 to 1.40 mm			
2.4.12	Mass of a disc (M)	12 cm disc	13.0 to 20.0 g			
		8 cm disc	6.0 to 9.0 g			
2.4.13	Moment of Inertia (I)	12 cm disc	$\leq 0.040 \text{ g} \cdot \text{m}^2$			
		8 cm disc	$\leq 0.010 \text{ g} \cdot \text{m}^2$			
2.4.14	Dynamic Imbalance (U)	12 cm disc	$\leq 0.010 \text{ g} \cdot \text{m}$			
		8 cm disc	$\leq 0.0045 \text{ g} \cdot \text{m}$			

\* Refer to DVD Specifications for Read-Only Disc Part 1 Ver. 1.0.

## Test results of the Optical parameters

Spec.* number	Parameter		Specification	Measurement value		Judgment (Lab use)
				Applicant	Lab	
2.5.1	Thickness of a transparent substrate (ST)		Refer to Book			
2.5.2	Thickness of space layer (TSL)	Max.	$55 \pm 15 \mu\text{m}$			
		Min.				
2.5.3 a	Variation of space layer : disc (TSL-D <sub>var</sub> )		$\pm 10 \mu\text{m max.}$			
2.5.3 b	Variation of space layer : circle (TSL-R <sub>var</sub> )	R = 25 mm	$\pm 4 \mu\text{m max.}$			
		R = 40 mm				
		R = 56 mm				
2.5.4 a	Refractive index substrate (RI <sub>sub</sub> )		$1.58^{+0.07}_{-0.13}$			
2.5.4 b	Refractive index space layer (RI <sub>space</sub> )		$\text{RI}_{\text{sub}} \pm 0.10$			
2.5.5 a	Angular deviation : radial (ADR)	Max.	$\pm 0.80 \text{ deg}$			
		Min.				
2.5.5 b	Angular deviation : tangential (ADT)	Max.	$\pm 0.30 \text{ deg}$			
		Min.				
2.5.6	Birefringence (Biref)	Max.	100 nm max.			
		Min.				
2.5.7	Reflectivity single layer with PBS (R <sub>SL_PBS</sub> )	R = 25 mm	45 to 85 %			
		R = 40 mm				
		R = 56 mm				
	Reflectivity single layer without PBS (R <sub>SL_noPBS</sub> )	R = 25 mm	60 to 85 %			
		R = 40 mm				
		R = 56 mm				
	Reflectivity dual layer with PBS (R <sub>DL_PBS</sub> )	R = 25 mm	18 to 30 %			
		R = 40 mm				
		R = 56 mm				
	Reflectivity dual layer without PBS (R <sub>DL_noPBS</sub> )	R = 25 mm	18 to 30 %			
		R = 40 mm				
		R = 56 mm				

\* Refer to DVD Specifications for Read-Only Disc Part 1 Ver. 1.0.

## Test results of the Recorded parameters

Spec.* number	Parameter		Specification	Measurement value		Judgment (Lab use)
				Applicant	Lab	
2.6.1	Sense of rotation from readout		Counter-clockwise			
2.6.2	LBR velocity variation		$\leq 0.5 \%$ (p-p)			
2.6.5	Starting diameter of Lead-in (SD <sub>LI</sub> )		$\leq 45.2$ mm			
2.6.6	Starting diameter of Data area (SD <sub>DA</sub> )		47.6 to 48.0 mm			
2.6.7	Outer diameter of Data area (OD <sub>DA</sub> )	12 cm disc	$\leq 116.0$ mm			
		8 cm disc	$\leq 76.0$ mm			
2.6.9	Inner diameter of Lead-out (ID <sub>LO</sub> )		Refer to Book			
2.6.10	Outer diameter of Lead-out (OD <sub>LO</sub> )		Refer to Book			
2.6.12 a	Max diff L0-L1 outer edge IA		0.5 mm			
2.6.12 b	Max diff L0-L1 outer edge DA		0.5 mm			
2.6.14 a	Vertical deviation (VD)	R = 25 mm	12 cm disc: $\pm 0.3$ mm 8 cm disc: $\pm 0.2$ mm			
		R = 40 mm				
		R = 56 mm				
2.6.14 b	Max. focus error (FE)	R = 25 mm	$\pm 0.23 \mu\text{m}$			
		R = 40 mm				
		R = 56 mm				
2.6.15 a	Radial run-out of tracks (RRO)	R = 25 mm	$\leq 100 \mu\text{m}$			
		R = 40 mm				
		R = 56 mm				
2.6.15 b	Max radial error (RE)	R = 25 mm	$\pm 0.022 \mu\text{m}$			
2.6.15 c	Radial Noise		0.016 $\mu\text{m}$ max.			

\* Refer to DVD Specifications for Read-Only Disc Part 1 Ver. 1.0.

## Test results of the Operational signals (1)

Spec.* number	Parameter		Specification	Measurement value		Judgment (Lab use)
				Applicant	Lab	
2.7.1 a	Jitter	R = 25 mm	< 8.0 % SL Thin type (Standard Density): < 7.0 %			
		R = 40 mm				
		R = 56 mm				
2.7.1 b	I <sub>14</sub> / I <sub>14H</sub>	R = 25 mm	≥ 0.60			
		R = 40 mm				
		R = 56 mm				
2.7.1 b	I <sub>3</sub> / I <sub>14</sub>	R = 25 mm	Standard Density: ≥ 0.15 Low Density: ≥ 0.20			
		R = 40 mm				
		R = 56 mm				
2.7.1 b	(I <sub>14Hmax</sub> -I <sub>14Hmin</sub> ) / I <sub>14Hmax</sub> Within one disc (with PBS)		≤ 0.33			
2.7.1 b	(I <sub>14Hmax</sub> -I <sub>14Hmin</sub> ) / I <sub>14Hmax</sub> Within one disc (without PBS)		≤ 0.20			
2.7.1 b	(I <sub>14Hmax</sub> -I <sub>14Hmin</sub> ) / I <sub>14Hmax</sub> Within one revolution (with PBS)	R = 25 mm	≤ 0.15			
		R = 40 mm				
		R = 56 mm				
2.7.1 b	(I <sub>14Hmax</sub> -I <sub>14Hmin</sub> ) / I <sub>14Hmax</sub> Within one revolution (without PBS)	R = 25 mm	≤ 0.10			
		R = 40 mm				
		R = 56 mm				
2.7.1 c	Asymmetry (A)	R = 25 mm	-0.05 to 0.15			
		R = 40 mm				
		R = 56 mm				
2.7.1 d	Track Cross (TCS)	R = 25 mm	≥ 0.10			
		R = 40 mm				
		R = 56 mm				

\* Refer to DVD Specifications for Read-Only Disc Part 1 Ver. 1.0.



## Test results of the Operational signals (2)

Spec.* number	Parameter		Specification	Measurement value		Judgment (Lab use)
				Applicant	Lab	
2.7.2 a	DPD Amplitude	R = 25 mm	0.5 to 1.1			
		R = 40 mm				
		R = 56 mm				
2.7.2 a	DPD Asymmetry	R = 25 mm	$\leq 0.2$			
		R = 40 mm				
		R = 56 mm				
2.7.3 a	PI errors	R = 25 mm	$\leq 280$			
		R = 40 mm				
		R = 56 mm				
2.7.3 b	Local defect: Air bubble		$\varnothing \leq 100 \mu\text{m}$			
2.7.3 b	Local defect: Black spot		$\varnothing \leq 200 \mu\text{m}$			
2.7.3 b	Local defect: Black spot Without birefringent area		$\varnothing \leq 300 \mu\text{m}$			
2.7.3 b	Total length of defects		$\leq 300 \mu\text{m}$			
2.7.3 b	Number of defects		$\leq 6$			

\* Refer to DVD Specification for Read-Only Disc Part 1 Ver. 1.0.

**Test result of the Physical format information**

Spec.* number	Parameter	Specification	Measurement value		Judgment (Lab use)
			Applicant	Lab	
3.4.1.3.1	Book type	0000b (Read-Only Disc)			

\* Refer to DVD Specification for Read-Only Disc Part 1 Ver. 1.0.

## List of the Test results

Section	Judgment	
	Applicant	Lab
<b>Form 4H:</b> Test results of the Mechanical parameters	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
<b>Form 5H:</b> Test results of the Optical parameters	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
<b>Form 6H:</b> Test results of the Recorded parameters	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
<b>Form 7H:</b> Test results of the Operational signals (1), (2)	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
<b>Form 8H:</b> Test result of the Physical format information	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
Test results of Logical	<input type="checkbox"/> OK <input type="checkbox"/> NG	<input type="checkbox"/> OK <input type="checkbox"/> NG
Describe the DVD-Audio Verifier used.		



## Confirmation of DVD Format Verification

The following product is confirmed that it is on the strength of DVD Specifications for Read-Only Disc Part 1 (Version 1.0), Part 2 (Version 1.0) and Part 4 (Version 1.2) by DVD Format Verification Laboratory of the Company:

1. Product name (DVD-Audio Disc)	:	<input type="checkbox"/> Single Layer Type <input type="checkbox"/> Dual Layer OTP Type <input type="checkbox"/> Dual Layer PTP Type	
2. Disc number	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
3. Method to recognize all discs of manufacturer	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
4. Application number	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
5. Date of application (mm. dd, yyyy)	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
6. Applicant: Name	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Company name	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Address	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Tel	:	<div style="border: 1px solid black; width: 150px; height: 1.2em;"></div>	/ Fax: <div style="border: 1px solid black; width: 150px; height: 1.2em;"></div>
Date of issue (mm. dd, yyyy)	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Confirmed by: Signature	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Name	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Lab name	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Address	:	<div style="border: 1px solid black; height: 1.2em;"></div>	
Tel	:	<div style="border: 1px solid black; width: 150px; height: 1.2em;"></div>	/ Fax: <div style="border: 1px solid black; width: 150px; height: 1.2em;"></div>
Attachment	:	1) Test results <b>Form 2H to 9H.</b> 2) Others: <div style="border: 1px solid black; width: 400px; height: 1.2em; display: inline-block;"></div>	

*Note: (1) The purpose of DVD Format Verification is to promote and enhance compatibility of DVD Product for DVD Industry based upon the minimum common specification requirements.*

*(2) The "Confirmation of DVD Format Verification", however, shall not be considered to guarantee the quality of product and the compatibility with a specific DVD disc or player/recorder.*

*(3) Information in this report shall be treated as confidential under the Non Disclosure Agreement executed between the applicant and DVD Format Verification Laboratory dated (mm. dd, yyyy)*