

ISO/IEC 16448 :2002-04 (E)

Information technology_ - 80_mm DVD_ - Read-only disk

Contents

Section 1 - General	1
1 Scope	1
2 Conformance	1
2.1 Optical Disk	1
2.2 Generating system	1
2.3 Receiving system	1
3 Normative reference	1
4 Terms and definitions	1
4.1 Adhesive layer	2
4.2 Channel bit	2
4.3 Clamping Zone	2
4.4 Digital Sum Value (DSV)	2
4.5 Disk Reference Plane	2
4.6 Dual Layer disk	2
4.7 Dummy substrate	2
4.8 Entrance surface	2
4.9 Optical disk	2
4.10 Physical sector number	2
4.11 Read-only disk	2
4.12 Recorded layer	2
4.13 Reed-Solomon code	2
4.14 Reserved field	2
4.15 Sector	2
4.16 Single Layer disk	2
4.17 Spacer	2
4.18 Substrate	2
4.19 Track	3
4.20 Track pitch	3
4.21 Zone	3
5 Conventions and notations	3
5.1 Representation of numbers	3
5.2 Names	3
6 List of acronyms	3
7 General description of the disk	4
8 General requirements	5
8.1 Environments	5
8.1.1 Test environment	5
8.1.2 Operating environment	6
8.1.3 Storage environment	6
8.1.4 Transportation	6
8.2 Safety requirements	6
8.3 Flammability	6
9 Reference measurement devices	6
9.1 Pick Up Head (PUH)	6
9.2 Measurement conditions	7
9.3 Normalized servo transfer function	8

9.4	Reference Servo for axial tracking	8
9.5	Reference Servo for radial tracking	9
Section 2 - Dimensional, mechanical and physical characteristics of the disk		10
10	Dimensional characteristics	10
10.1	Overall dimensions	10
10.2	First transition area	10
10.3	Second transition area	10
10.4	Clamping Zone	10
10.5	Third transition area	10
10.6	Information Zone	11
10.6.1	Sub-divisions of the Information Zone	11
10.6.2	Track geometry	12
10.6.3	Track modes	12
10.6.4	Channel bit length	12
10.7	Rim area	12
10.8	Remark on tolerances	12
10.9	Runout	13
10.9.1	Axial runout	13
10.9.2	Radial runout	13
10.10	Label	13
11	Mechanical parameters	13
11.1	Mass	13
11.2	Moment of inertia	13
11.3	Dynamic imbalance	13
11.4	Sense of rotation	13
12	Optical parameters	13
12.1	Index of refraction	13
12.2	Thickness of the transparent substrate	13
12.3	Thickness of the spacer of Types C and D	13
12.4	Angular deviation	13
12.5	Birefringence of the transparent substrate	14
12.6	Reflectivity	14
Section 3 - Operational Signals		17
13	High frequency signals (HF)	17
13.1	Modulated amplitude	17
13.2	Signal asymmetry	18
13.3	Cross-track signal	18
13.4	Quality of signals	18
13.4.1	Jitter	18
13.4.2	Random errors	18
13.4.3	Defects	18
14	Servo signals	18
14.1	Differential phase tracking error signal	19
14.2	Tangential push-pull signal	19
Section 4 - Data Format		21
15	General	21
16	Data Frames	21
16.1	Identification Data (ID)	21

16.2	ID Error Detection Code (IED)	22
16.3	Copyright Management Information (CPR_MAI)	23
16.4	Error Detection Code (EDC)	23
17	Scrambled Frames	23
18	ECC Blocks	24
19	Recording Frames	25
20	Modulation	26
21	Physical Sectors	27
22	Suppress control of the d.c. component	28
Section 5 - Format of the Information Zone(s)		29
23	General description of an Information Zone	29
24	Layout of the Information Zone	29
25	Physical Sector numbering	29
26	Lead-in Zone	31
26.1	Initial Zone	32
26.2	Reference Code Zone	32
26.3	Buffer Zone 1	32
26.4	Buffer Zone 2	32
26.5	Control Data Zone	32
26.5.1	Physical format information	33
26.5.2	Disk manufacturing information	34
26.5.3	Content provider information	34
27	Middle Zone	35
28	Lead-out Zone	35
Annexes		
A (normative)	- Measurement of the angular deviation α	36
B (normative)	- Measurement of birefringence	38
C (normative)	- Measurement of the differential phase tracking error	40
D (normative)	- Measurement of light reflectance	44
E (normative)	- Tapered cone for disk clamping	46
F (normative)	- Measurement of jitter	47
G (normative)	- 8-to-16 Modulation with RLL (2,10) requirements	50
H (normative)	- Burst Cutting Area (BCA)	60
J (normative)	- Source Identification Code (SID)	65
K (informative)	- Measurement of the thickness of the spacer of Dual Layer disks	68
L (informative)	- Note on the Reference Code	70
M (informative)	- Maximum transfer rate	71
N (informative)	- Disk bonding	72
P (informative)	- Transportation	74