ISO/IEC 18836:2001-02 (E)

Information technology_- 8_mm wide magnetic tape cartridge for information interchange_- Helical scan recording; Mammoth-Tape-2 format

Contents

Section 1 - General		**1**
1	Scope	**1**
2	Conformance	**1**
2.1	Magnetic tape cartridges	**1**
2.2	Generating drive	**1**
2.3	Receiving drive	**1**
3	References	**1**
4	Definitions	**1**
4.1	a.c. erase	**1**
4.2	algorithm	**1**
4.3	Average Signal Amplitude	**1**
4.4	azimuth	**2**
4.5	back surface	**2**
4.6	bit cell	**2**
4.7	byte	**2**
4.8	cartridge	**2**
4.9	Channel bit	**2**
4.10	Cyclic Redundancy Check (CRC) character	**2**
4.11	Error Correcting Code (ECC)	**2**
4.12	File Mark	**2**
4.13	Logical Beginning of Partition (LBOP)	**2**
4.14	Logical Block	**2**
4.15	magnetic tape	**2**
4.16	Master Standard Reference Tape	**2**
4.17	Partition	**2**
4.18	Physical Beginning of Partition (PBOP)	**2**
4.19	Physical Beginning of Tape (PBOT)	**2**
4.20	Physical End of Partition (PEOP)	**2**
4.21	Physical End of Tape (PEOT)	**2**
4.22	physical recording density	**2**
4.23	Read Back Check (RBC)	**2**
4.24	Reference Field	**2**
4.25	Secondary Standard Reference Tape (SSRT)	**2**
4.26	Set Mark	**2**
4.27	Standard Reference Amplitude (SRA)	**2**
4.28	Standard Reference Current (Ir)	**2**
4.29	Tape Reference Edge	**2**
4.30	Test Recording Current (TRC)	**2**
4.31	Track	**3**
4.32	Typical Field	**3**
5	Conventions and Notations	**3**
5.1	Representation of numbers	**3**
5.2	Names	**3**
6	Acronyms	**3**

7 Environment and Safety **4**
7.1 Testing environment **4**
7.2 Operating environment **4**
7.3 Storage environment **4**
7.4 Transportation **4**
7.5 Safety **4**
7.6 Flammability **4**

Section 2 - Requirements for the case **5**

8 Dimensional and mechanical characteristics of the case **5**

8.1 General **5**
8.2 Overall dimension **5**
8.3 Holding areas **6**
8.4 Cartridge insertion **6**
8.5 Window **7**
8.6 Loading grips **7**
8.7 Label areas **7**
8.8 Datum areas and datum holes **7**
8.9 Support areas **8**
8.10 Recognition holes **9**
8.11 Write-inhibit hole **9**
8.12 Pre-positioning surfaces **10**
8.13 Cartridge lid **10**
8.14 Cartridge reel lock **11**
8.15 Reel access holes **12**
8.16 Interface between the reels and the drive spindles **12**
8.17 Light path **14**
8.18 Position of the tape in the case **14**
8.19 Tape path zone **14**
8.20 Tape access cavity **15**
8.21 Tape access cavity clearance requirements **15**

Section 3 - Requirements for the Unrecorded Tape **32**

9 Mechanical, physical and dimensional characteristics of the tape **32**

9.1 Materials **32**
9.2 Tape length **32**

9.2.1 Length of the magnetic tape **32**
9.2.2 Length of leader and trailer tapes **32**
9.2.3 Length of the cleaning tape **32**
9.2.4 Length of the splicing tape **32**

9.3 Width **32**

9.3.1 Width of magnetic, cleaning, leader and trailer tape **32**
9.3.2 Width and position of the splicing tape **33**
9.3.3 Edge weave **33**

9.4 Discontinuities **34**
9.5 Thickness **34**

9.5.1 Thickness of the magnetic tape **34**
9.5.2 Thickness of the cleaning tape **34**
9.5.3 Thickness of leader and trailer tape **34**
9.5.4 Thickness of the splice tape **35**

9.6 Longitudinal curvature **35**
9.7 Cupping **35**
9.8 Coating adhesion **35**
9.9 Layer-to-layer adhesion **36**
9.10 Tensile strength **36**

9.10.1 Breaking strength **36**
9.10.2 Yield strength **36**

9.11 Residual elongation **36**
9.12 Electrical resistance of the recording surface **36**
9.13 Tape winding **37**
9.14 Light transmittance of tape **37**
9.15 Abrasivity **37**

10 Magnetic recording characteristics **37**

10.1 Test conditions **37**
10.2 Typical Field **37**
10.3 Signal Amplitude **38**
10.4 Resolution **38**
10.5 Signal-to-Noise Ratio **38**
10.6 Ease of erasure **39**
10.7 Tape quality **39**

10.7.1 Missing pulses **39**
10.7.2 Missing pulse zone **39**
10.7.3 Overwrite **39**

Section 4 - Requirements for an Interchanged Tape **40**

11 Track Format **40**

11.1 General **40**
11.2 Physical block format **41**

11.2.1 Logical Transfer Segment (LTS) **41**
11.2.2 Compression Unit **42**
11.2.3 Physical block **43**
11.2.4 Information Matrix **50**
11.2.5 Recorded patterns **51**

11.3 Search field format **51**
11.3.1 Search field data **51**

11.3.2 Search field CRC and ECC **53**
11.3.3 Search field recording patterns **53**

11.4 Servo area **53**
11.5 Track layout **53**

12 Method of recording **56**

12.1 Physical Recording Density **56**

12.1.1 Long Term Average Bit Cell Length **56**
12.1.2 Short Term Average Bit Cell Length **56**
12.1.3 Rate of Change **56**

12.2 Bit Shift **57**
12.3 Amplitude of Data Signals **57**

13 Track geometry **57**

13.1 General **57**
13.2 Track pitch **57**
13.3 Average track pitch **57**
13.4 Track width **57**
13.5 Track angle **58**
13.6 Track length **58**
13.7 Guard band **58**
13.8 Azimuth angles **58**
13.9 Track linearity **58**

14 Layout of a tape **58**

14.1 General **58**
14.2 Tape History Log (THL) **58**
14.3 Physical Beginning of Partition **59**
14.4 Logical Beginning of Partition **59**
14.5 Data area **59**

14.5.1 General **59**
14.5.2 Short File Mark **59**
14.5.3 Long File Mark **59**
14.5.4 Set Mark **59**

14.6 End of Data **59**
14.7 Physical End of Partition (PEOP) **59**

Annexes

A (normative) - Measurement of Light Transmittance of Tape and Leaders **60**

B (normative) - Tape abrasivity measurement procedure **63**

C (normative) - Generation of the Logical Block CRC **65**

D (normative) - ECC3 Check Bytes **66**

E (normative) - Generation of the Data Area CRC **67**

F (normative) - Generation of the ECC **68**

G (normative) - Pre-coder **69**

H (normative) - Representation of 8-bit bytes by 10-bit patterns **70**

J (normative) - Randomisation **77**

K (normative) - Generation of the Search Field CRC **78**

L (normative) - The Search Field ECC **79**

M (normative) - Measurement of bit shift **80**

N (informative) - Recommendations for transportation **82**