

JIS

JAPANESE INDUSTRIAL STANDARD

**File Specification for Japanese
Documents Interchange
(Business Graph Type)**

JIS X 4002^{—1987}

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In the event of any doubt arising,
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File Specification for Japanese Documents
Interchange (Business Graph Type)

X 4002-1987

1. Scope

This Japanese Industrial Standard specifies specifications of document files when interchange of Japanese documents on the bases of characters and business graphs is carried out, using flexible disc cartridges, between Japanese word processors or information processing machines equivalent in ability, each other.

In this standard, the following matters are specified:

- (1) Document file structure
- (2) Classification and types of information composing document files
- (3) Classification and functions of character codes (graphic characters, control characters) to be used.
- (4) Structure of block data section
- (5) Information composing block data section

2. Definitions

For the purposes of this standard, the following definitions apply, in addition to the definitions of JIS X 0001.

- (1) document The information which is represented in two dimensional form so that it can be understood by man, for example the ones which are represented by printing on paper or on graphs.

In this standard, the document is composed of one page or plural pages, having document format information which defines the initial value of the format at the time of preparing the document.
- (2) document file A file consists of one or more documents which is intended for Japanese document interchange. The document file consists of a document header section and a document data section, and one document is stored in a medium as one pair of document header information in the document header section and the document substance in the document data section.
- (3) file A set of related records treated as one unit. A file can be stored as the whole or a part of one volume, or extending over two or more volumes.

- (4) volume The physical unit of data media which is capable of being attached or detached. In this standard, the flexible disc cartridge corresponds to this. In one volume, the whole or a part of one file, or two or more files can be stored.
- (5) record A set of continuous data on a medium as a unit of storage and reading. In this standard, a length of 256 byte is employed.
- (6) extent A string of records having the address of continuous ascending sequence.
- (7) system label The set of volume header label, file header label and the like specified in JIS X 0603.
- (8) document header information The information to be placed in ahead of a document essential to be stored in a document file, to identify each document and to represent its storage location and its attribute, etc.
- (9) document interchange level The level of document classified according to the presence of business graphe, coded representation of characters to be processed and control characters, contained in the document to be interchanged.
- (10) document format information Information which defines the standard of papers on which documents are to be printed, physical arrangement of characters on papers, physical representation method of individual letter, etc.
In this standard, this is used for the purpose of defining the initial value of the format of interchanging document.
- (11) control characters The coded characters expressing control functions.
- (12) graphic characters The coded characters other than the control characters, having visible representation of printing and displaying.
- (13) "KANJI" space A character representing space in accordance with JIS X 0208.
- (14) text A string of graphic characters and control characters of a document consisting of single page or plural pages.
- (15) page A text which has been divided on the basis of the physical limit of paper or style of document.
- (16) character direction The direction along which characters are read.
- (17) row direction A direction perpendicular to the character direction.
- (18) row The one-dimensional arrangement of characters within a page, which partitions a page in character direction.
- (19) character pitch The amount of character feed when characters are arranged in a row.
- (20) row pitch The amount of line feed when rows are arranged.

- (21) vertical writing The arrangement of characters so that the characters of each line are arranged from the top to the bottom for vertical reading.
- (22) horizontal writing The arrangement of characters so that the characters of each line are arranged from the left to the right for horizontal reading.
- (23) active position The character position intended to be processed next. After it has been processed, the active position advances, generally, by one character.
- (24) beginning of row That position where the first character of the row starts. The position, where the left end character starts in a horizontal writing, or the upper end character starts in a vertical writing, starts. The next character position to the margin corresponding to number of characters in blank field in character direction of document format information.
- (25) end of row That last character position in a row. The character position, where the characters terminate at the right end in a horizontal writing or at the lower end in a vertical writing. The character position corresponding to the sum of the number of the characters in blank field in the character direction and the number of characters in the character fields per row of a document format information.
- (26) full size The size of a character in which the size in character direction is normal.
- (27) half size The size of a character in which the size in character direction is 50 % of the full size.
- (28) double size The size of a character in which the size in character direction is 200 % of the full size.
- (29) business graphs The information being represented in graphic style among the information contained in a document. It means the bent line graph, bar graph, piled up bar graph, band graph and circular graph in this standard.
- (30) reference axis The fundamental axis to represent the bent line graph, bar graph and piled up bar graph.
- (31) actual data axis An axis being taken in the right angle direction to the reference axis.
- (32) base line A straight line which is drawn in parallel to the reference axis from the reference position of the actual data axis, to be used as a reference line secondarily to the reference axis.
- (33) elements A units of data sets composing a business graph. In the bent line graph, bar graph and piled-up bar graph, this makes reference axis, and in the band graph and circular graph, this indicate the ratio in respect to the total body.
- (34) item The type of elements having the same properties.

- (35) block The area of rectangular shape (including a square.) in which a business graph exists, within the page of a document. Herein a business graph is arranged.
- (36) block format information The information which specifies the number and size of a block.
- (37) graph area An area within a block in which a graph is represented.

3. Structure of File for Japanese Documents Interchange (Business Graphs)

3.1 Document File The document file shall be the file made on a flexible disc cartridge in accordance with JIS X 0603, and be of the non-blocked type of 256 byte per sector.

The document file shall be composed of the document header section and document data section.

The document to be dealt with in this standard shall be composed of the document header label and document substance. These shall be represented in the document header section and document data section on the document file, respectively. The positioning and structure of the document file shall be as shown in Fig. 1.

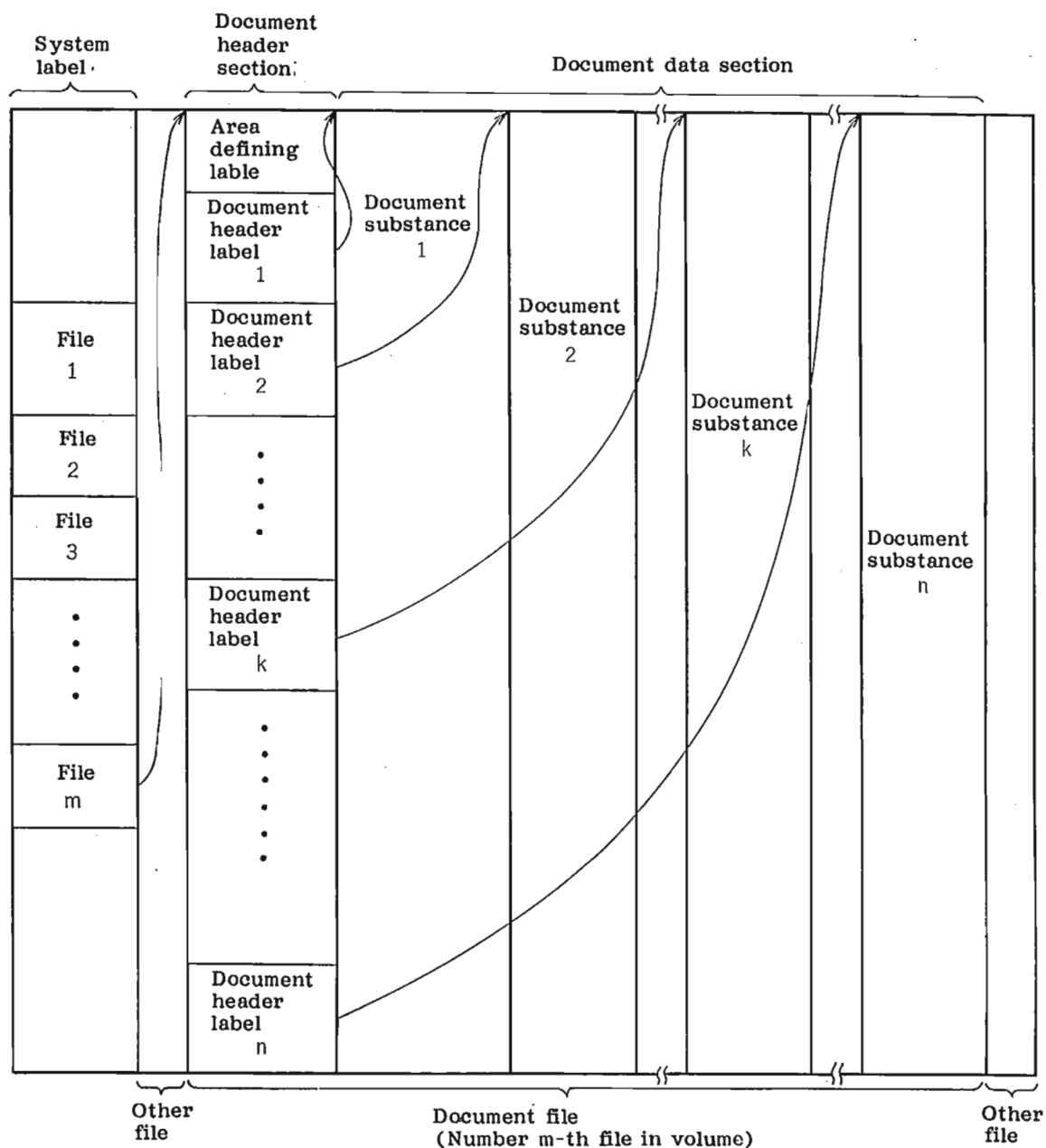
Applicable Standards:

- JIS X 0001-Glossary of Terms Used in Information Processing
- JIS X 0201-Code for Information Interchange
- JIS X 0202-Code Extension Techniques for Use with the Code for Information Interchange
- JIS X 0208-Code of the Japanese Graphic Character Set for Information Interchange
- JIS X 0210-Representation of Numerical Values in Character Strings for Information Interchange
- JIS X 0603-File Structure and Labelling of Flexible Disk Cartridges for Information Interchange

Reference Standard:

- JIS X 4001-File Specification for Japanese Documents Interchange (Basic Type)

Fig. 1. Positioning and Structure of Document File



Remarks 1. The document k shall be composed of document header label k and document substance k (k signifies from 1 to n.).

2. For area defining label, refer to 4.2.

Furthermore, one document file shall be stored in one volume. However, in the case where the last document substance of the volume is composed of a text only, this text may be allowed to be stored in the second volume. In this case, the text shall be stored from the first character position of the first record of the second volume.

3.2 Document Header Section The document header section, which is located at the head of document file, consists of one area defining label and one or plural document header labels. The area defining label shall be an area defining information specifying the area of the document header section, and the contents of which are specified in 4.2.

The document header label means the document header information which carries out identification of each document contained in the document file, and allocation of storage and the like in the file, and its contents are specified in 4.3.

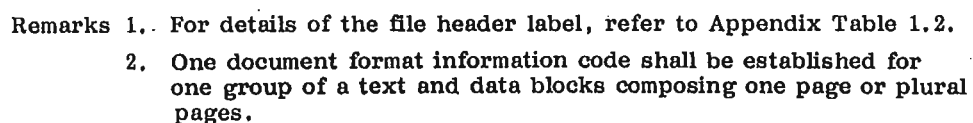
3.3 Document Data Section The document data section consists of one or plural number of document substances which have been defined by the document header label in the document header section. One document substance shall be composed of one document format information, text and zero or more data blocks. The document format information shall be stored in the head of document substance, and its contents are specified in 5.2. The text and data blocks shall be as given in (1) to (6), and, their contents are specified in 6. and 7., respectively.

- (1) The text shall be commenced from directly after the preceding document format information.
- (2) The data blocks shall follow the text.
- (3) All or a part of the text and the data blocks shall be stored in the continuous record in the volume.
- (4) All or a part of the text and the data blocks shall be stored in the volume in which the document header label of document header section is located.
- (5) The head of the first data block of the document data section shall be specified by the document header label concerned.
- (6) The length of each data block is specified by the block format information concerned, and the next data block shall be commenced in the consecutive record.

Positioning on the document file of the document header section and character data section shall be in accordance with Fig. 2.

Furthermore, the format of the system label shall be in accordance with Appendix 1.

System Label



4. Document Header Section

4.1 Structure of Document Header Section The document header section shall be positioned at the head of the document file, and be composed of one area defining label and one or plural document header labels.

4.2 Area Defining Label The area defining label shall indicate an area in which the document header label contained in the document file is to be stored. The contents of the area defining label shall be in accordance with Table 1. The details shall be as given in (1) to (5).

Table 1. Area Defining Label

Position in label	Name	Length (byte)	Content
1 to 3	Label identifier	3	Graphic character "DHL"
4	Label number	1	Digit "1"
5 to 103	(reserved for future standardization)	99	Space
104 to 108	Address of last header label of document header	5	Digit
109 to 113	End address of document header	5	Digit
114 to 256	(reserved for future standardization)	143	Space

Remark: The codes of characters representing contents shall be in accordance with JIS X 0201.

- (1) Label Identifier (positions in label: 1 to 3) This field shall specify the identifier of the file. It shall be specified by graphic characters "DHL".
- (2) Label Number (position in label: 4) This field shall specify the label number. It shall be specified by a digit "1".
- (3) Address of Last Header Label of Document Header (positions in label: 104 to 108) This field shall specify the record number of the last header label in document header, and the relative record number to the head of file shall be specified by 5 digits. The head record number of file shall be "00000".
- (4) End Address of Document Header (positions in label: 109 to 113) This field shall specify the record number of the end of document header, and the relative record number to the head of file shall be specified by 5 digits. The head record number of file shall be "00000".
- (5) Field Reserved for Future Standardization (positions in label: 5 to 103 and 114 to 256) This field shall be reserved for future standardization, and shall be filled with spaces.

4.3 Document Header Label The document header label shall be prepared for each document contained in document file, and shall indicate identification of document, designation of storage positions within the file, document interchange level, etc.

The first document header label shall be recorded immediately after the area defining label, namely, in the record number "00001".

The following document header label shall be recorded immediately after the foregoing document header label.

The content of the document header label shall be in accordance with Table 2. The details shall be as given in (1) to (18).

Table 2. Document Header Label

Position in label	Name	Length (byte)	Content
1 to 3	Label identifier	3	Graphic character "DHL"
4	Label number	1	Digit "2"
5	(Reserved for future standerdization)	1	Space
6 to 65	Document identification name	60	Graphic character (JIS X 0208)
66 to 85	Writer's name	20	Ditto
86 to 87	Number of edition	2	Digit
88 to 95	Creation date	8	Digit
96 to 99	Number of pages	4	Digit
100	(Reserved for future standardization)	1	Space
101 to 102	Document interchange level	2	Digit "10", "11" or "20"
103	(Reserved for future standardization)	1	Space
104 to 108	Head address of document	5	Digit
109 to 113	End address of document	5	Digit
114 to 116	Unused byte number of last record of text	3	Digit
117	Bypass indicator	1	Graphic character
118 to 125	Password	8	Ditto
126	Document split indicator	1	Space or digit "1"
127 to 131	Head address of first data block	5	Digit or space
132 to 136	End address of last data block	5	Ditto
137 to 196	(Reserved for future standardization)	60	Space
197 to 256	Document memorandum	60	Graphic character (JIS X 0208)

Remark: The code of characters representing contents, unless stated to comply with JIS X 0208, shall be in accordance with JIS X 0201.

- (1) Label Identifier (positions in label: 1 to 3) This field shall specify the label identifier. It shall be specified by graphic characters "DHL".
- (2) Label Number (position in label: 4) This field shall specify the label number, and it shall be specified by a digit "2".
- (3) Document Identification Name (position in label: 6 to 65) This field shall specify the identification of the document and it shall be represented by graphic characters. The document identification name shall be specified by the person who has prepared this document at time of the document preparation.
- (4) Writer's Name (positions in label: 66 to 85) This field shall specify the author of document, and it shall be represented by graphic characters.
- (5) Number of Edition (positions in label: 86 to 87) This field shall specify the number of edition, and it shall be represented by digits.
- (6) Creation Data (positions in label: 88 to 95) This field shall specify the date of creation of the document, and it shall be represented by 6 digits composed of the lower 2 digits of A.D., month in 2 digits and day in 2 digits, the year, month and day hyphenated.
- (7) Number of Pages (positions in label: 96 to 99) This field shall specify the number of pages of document, and it shall be represented by digits.
- (8) Document Interchange Level (positions in label: 101 to 102) This field shall specify the interchange level of document and the level shall be classified by the coded representation of characters and control characters dealt with in the document.

It shall be represented by the following digits.

Digit "10": The coded representation shall be made by graphic characters, and the control characters shall be of 21 types excluding BUS from Table 5.

Digit "11": The coded representation shall be made by graphic characters, and the control characters shall be of 16 types excluding CHT, HTSA, JFY, NUL, DT and BUS from Table 5.

Digit "20": The coded representation shall be made by graphic characters, and the control characters shall be of 22 types indicated in Table 5.

Digits "10" and "11" shall represent the document interchange level of fundamental form, and digit "20" shall represent the interchange level of business graphs.

- (9) Head Address of Document (positions in label: 104 to 108) This field shall indicate the head number of record in which the document is being stored, and the relative record number from the head of file shall be specified by 5 digits. The head record number of the file shall be "00000".

- (10) End Address of Document (positions in label: 109 to 113) This field shall indicate the last number of record in which the document is being stored, and the relative record number from the head of file shall be specified by 5 digits. The head record number of file shall be "00000". However, if the record number is extending over plural volumes, it shall be "99999".
- (11) Unused Byte Number of Last Record of Text (positions in label: 114 to 116) The byte number of unused part in the last record of text shall be specified by 3 digits.
- (12) Bypass Indicator (position in label: 117) This field shall specify whether or not a document may be ignored in interchange, and the designation shall be made by the following characters.
- Space: Not to be neglected.
- Graphic character "B": To be neglected.
- (13) Password (positions in label: 118 to 125) This field is used for password of document, and the designation shall be made by 8 characters. When a character string conforming to the password is given, the document can be read out. If the string of 8 graphic characters consist of spaces only, such case means no password.
- (14) Document Split Indicator (position of label: 126) This field shall specify whether a document finishes within the volume, or extends over another volume, and the designation shall be made by the following characters:
- Space: The document finishes in this volume.
- Digit "1": The document does not finish in this volume.
- (15) Head Address of First Data Block (positions in label: 127 to 131) This field shall specify the head record number of the first data block stored, and the relative record number to the head of file shall be specified by 5 digits. The head record number of the file shall be "00000". However, when the number of data blocks is zero, this field shall be filled with spaces.
- (16) End Address of Last Data Block (positions in label: 132 to 136) This field shall specify the last record number of the last data block stored, and the relative record number to the head of file shall be specified by 5 digits. The head record of the file shall be "00000". However, when the number of data blocks is zero, this field shall be filled with spaces.
- (17) Document Memorandum (positions in label: 197 to 256) This field is used for notes when attachment of document memorandum is intended.
- (18) Fields Reserved for Future Standardization (positions in label: 5, 100, 103, 137 to 196) These fields shall be reserved for future standardization and be filled with spaces.

5. Document Data Section

5.1 Structure of Document Data Section The document data section shall consist of one or plural number of document substances defined by the document header label in the document header. Each document substance shall be composed of the document format information of 256 bytes, and a text and data blocks following immediately after the above.

5.2 Document Format Information The document format information shall define the initial value of the format of document interchanged, and their contents shall be in accordance with Table 3. The details shall be as shown in (1) to (9). All or a part of the document format information may be omitted. In the case of omission, the related fields shall be filled with spaces. The format when all parts are omitted shall be in accordance with Appendix 2.

Table 3. Document Format Information

Position in record	Name	Length (byte)	Content
1 to 2	Page format	2	Digit
3	Vertical writing/horizontal writing	1	Digit "0" or "1"
4 to 5	Character pitch	2	Digit
6 to 7	Row pitch	2	Digit
8 to 14	(Reserved for future standardization)	7	Space
15 to 17	Number of characters per row	3	Digit
18 to 20	Number of rows per page	3	Digit
21 to 22	Row directional margin	2	Digit
23 to 24	Character directional margin	2	Digit
25 to 256	(Reserved for future standardization)	232	Space

Remark: The code of characters representing content shall be in accordance with JIS X 0201.

- (1) **Page Format** (positions in record: 1 to 2) This space shall specify the format for each combination of the sizes and directions on papers, and the designation shall be made by the following 2 digits. When the designation is omitted, it shall be considered as digits "10".

Digit "00": Format for short-side directional row of A4 and North American size in common.

Digit "10": Format for short-side directional row of size A4.

Digit "11": Format for long-side directional row of size A4.

Digit "12": Format for short-side directional row of size B5.

Digit "13": Format for long-side directional row of size B5.

Digit "14": Format for short-side directional row of size B4.

Digit "15": Format for long-side directional row of size B4.

Remarks 1. The North American size shall be 215.9 x 279.4 mm.

2. The digits "00" shall be for European language document, and the digits "10" to "15" for Japanese language document.

- (2) Vertical Writing/Horizontal Writing (position in record: 3) This space shall specify classification of vertical writing or horizontal writing and the designation shall be made the one digit given below. When the designation is omitted, it shall be considered as a digit "0".

Digit "0": Horizontal writing

Digit "1": Vertical writing

- (3) Character Pitch (positions in record: 4 to 5) This field shall specify character pitch, the designation shall be made by the 2 digits given below. When the designation is omitted, it shall be considered as the digit "03".

Digit "00": 10 characters per 25.4 mm

Digit "03": 6 characters per 25.4 mm

Remark: The digit "00" shall be for European language document, and "03" for Japanese language document.

- (4) Row Pitch (positions in record: 6 to 7) This field shall specify the row pitch, and the designation shall be made by 2 digits given below. When the designation is omitted, it shall be considered as the digit "01".

Digit "00": 6 rows per 25.4 mm

Digit "01": 4 rows per 25.4 mm

Digit "02": 3 rows per 25.4 mm

Digit "03": 12 rows per 25.4 mm

Remark: The digits "00" to "03" shall be for European language document, and "00" to "02" for Japanese language document.

- (5) Number of Characters per Row (positions in record: 15 to 17) This field shall specify number of characters per row, and the designation shall be made by 3 digits. When the designation is omitted, it shall be considered as the relevant value given in Appendix Table 3.1.

- (6) Number of Rows per Page (positions in record: 18 to 20) This field shall specify number of rows per page, and the designation shall be made by 3 digits. When the designation is omitted, it shall be considered as the relevant value given in Appendix 3.2.

- (7) Row Directional Margin (positions in record: 21 to 22) This field shall specify the margin from the end of paper to the first row, and the amount of margin shall be specified by 2 digits. The amount of margin shall be represented by the number of rows taking the row pitch which has been defined in the row pitch [see (4)] as a unit. When it is omitted, it shall be considered to be digit "03".

- (8) Character Directional Margin (positions in record: 23 to 24)
This field shall specify the margin from the end of paper to the position of the first character, and the amount of margin shall be specified by 2 digits. The amount of margin shall be represented by the number of characters taking the character pitch defined in the character pitch [see (3)] as a unit. When it is omitted, it shall be considered to be digit "06".
- (9) Areas Reserved for Future Standardization (positions in record: 8 to 14, 25 to 256) This field shall be reserved for future standardization, and shall be filled with spaces.

6. Text

6.1 Structure of Text The text shall be composed of graphic characters and control characters.

6.2 Graphic Characters For the graphic characters, both of the graphic characters specified in JIS X 0208-1983 and the Roman-characters set of JIS X 0201 shall be used. The changing over of the both shall be designated by the escape sequence given in Table 4.

Furthermore, among the graphic characters specified in JIS X 0208-1983 the characters and symbols from 13th point to 18th point of the section 1 and 94th point of the section 2, shall be used in combination with other graphic characters.

Table 4. Changing-over Escape Sequence of Graphic Characters

	7 bit			8 bit		
Changing-over to JIS X 0201	ESC	2/8	4/10	ESC	02/8	04/10
Changing-over to JIS X 0208	ESC	2/4	4/2	ESC	02/4	04/2

6.3 Control Characters

6.3.1 Types and Representation of Control Characters For the control characters, the 22 characters given in Table 5 shall be used.

Furthermore, the code extension procedure shall be in accordance with JIS X 0202.

- (1) 8-bit Code The coded representation of control characters not accompanied with parameters shall be as given in Table 6. The coded representations of control characters accompanied with parameters shall be as shown in Table 7.
- (2) 7-bit Code The coded representation of control characters not accompanied with parameters shall be as given in Table 8 and Table 9. The coded representations of control characters accompanied with parameter shall be as given in Table 7.

6.3.2 Functions of Control Characters The functions of control characters shall be in accordance with Table 10.

6.3.3 Representation of Control Characters The coded representations of control characters shall be as given in Table 11 and 12.

Table 5. Types and Classification of Control Characters

Major-classification	Minor-classification	Name	Acronym	Parameter	Document interchange level correspondent
Information separation		Document separation	DT		"10" "20"
Format control	Position control	Back space	BS		"10" "11" "20"
		Character horizontal tabulation	CHT	n	"10" "20"
		Line feed	LF		"10" "11" "20"
		Format feed	FF		"10" "11" "20"
		Carriage return	CR		"10" "11" "20"
		Space	SP		"10" "11" "20"
	Tabulation control	Horizontal tabulation assignment	HTSA	n1; n2;...	"10" "20"
	Style control	Page format selection	PFS	s	"10" "11" "20"
		Selection of printing direction	SPD	s	"10" "11" "20"
		Selection of vertical spacing	SVS	s	"10" "11" "20"
		Selection of horizontal spacing	SHS	s	"10" "11" "20"
		Graphic character size modification	GSM	n1; n2	"10" "11" "20"
		Graphical modulation	SGR	s	"10" "11" "20"
		Justify	JFY	s	"10" "20"
		Block Assignment	BUS	n	"20"
Special control	Special form control	Partial line up	PLU		"10" "11" "20"
		Partial line down	PLD		"10" "11" "20"
	Extension control	Extension	ESC		"10" "11" "20"
		Control function extension	CSI		"10" "11" "20"
	Others	Nul character	NUL		"10" "20"
		Substitute character	SUB		"10" "11" "20"

Remark: n in parameter indicates a numerical parameter, and s in parameter indicates a selection parameter. When the parameter column is empty, it indicates that the control character is not accompanied with parameter.

[illegible]

Acronym	Coded representation
PFS	CSI s 2/0 4/10
SGR	CSI s 6/13
SHS	CSI s 2/0 4/11
SVS	CSI s 2/0 4/12
SPD	CSI s 2/0 5/3
GSM	CSI n 1 ; n 2 2/0 4/2
JFY	CSI s 2/0 4/6
CHT	CSI n 4/9
HTSA	CSI n 1 ; n 2 ; ...2/0 4/14
BUS	CSI n 2/0 4/15

Documents
Document Sharing Hub