

5. All Data Management Frame

name [All Data Management Frame]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	2048		Data Volume		
2	2048	2048		A Sequence of Management Header Tables [n]		b

5.1 Data Volume

This data volume stores the media identification information and the main components of storage data.

name [Data Volume]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	64	MID:C	System-specific Identification	(1)	a
2	64	64	MID:C	Data author Identification	(2)	a
3	128	32	MID:C	System Identification	(3)	a
4	160	64	C	Format Version Number	(4)	a
5	224	64	C	Data Version Number	(5)	b
6	288	128	CC	Disk Title	(6)	a
7	416	8	B	Data Contents	(7)	a
8	424	32	C	Media Version Number	(8)	b
9	456	16		Data Coverage	(9)	a
10	472	2	N	Logical Sector Size	(10)	a
11	474	2	N	Sector Size	(11)	a
12	476	2	B:B	Background Data Default Information	(13)	a
13	478	14		(RESERVED)		a
14	492	256		Level Management Information		a
15	748	1300		(RESERVED)		a

(1) System-specific Identification

This field identifies the maker of the system if the data is system-dependent.

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	12	MID	Maker Identification (12)		
2	12	52	C	System-specific Identification defined by the maker		

(2) Data Author Identification

This field describes the maker who created the media data.

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	12	MID	Maker Identification (12)		
2	12	52	C	Identification of the Data Author (defined by the author)		

(3) System Identification

The first 12 bytes of the system identification describe MID of the hardware manufacturer. The definition of data after MID depends on the maker who identifies the system.

(4) Format Version Number

The format version number is `FORMAT_VERSION_KIWIaa-bb-cc`, where the underscore (`_`) means a space character.

When the specification is revised, a new version number `aa-bb-cc` is assigned according to the rules below:

- aa: Increased when the specification is amended significantly. This number change makes the existing application program partially or entirely unavailable.
- bb: Increased when the specification is amended to remove any inconvenience or when data is added to the specification to enhance the function. This number change does not affect the performance of existing application programs (the compatibility remains).
- cc: Increased when typographical errors are corrected or when description is changed or added. This number change does not affect the performance of application programs (the compatibility remains).

To align the data length to 32 words, the remaining blanks are padded with 0(16)/one word.

The character types of the data to be stored are:

- aa: Number (decimal number from 01 to 99)
- bb: Number (decimal number from 00 to 99)
- cc: Number (decimal number from 00 to 99)

(5) Data Version Number

Two different data version numbers are assigned; one for a prototype and the other for mass-production.

(a) Mass Production

The data version number `DATA_VERSION_aa/bb/cc/dd` is assigned, where the underscore (`_`) is a space character. This number is unique on a production lot basis. This number must be changed when editing the data will change the address on the media, such as the case where data source is updated or the media are newly edited.

- aa: The year when the product is manufactured (ex. 97)
- bb: The month when the product is manufactured (ex. 03)
- cc: The day when the product is manufactured (ex. 10)
- dd: Serial number assigned to products manufactured in a day (ex. 01)

To align the data length to 32 words, the remaining blanks are padded with 0(16) for one word.

The character types of the data to be stored are:

- aa: Number (decimal number from 00 to 99)
- bb: Number (decimal number from 01 to 12)
- cc: Number (decimal number from 01 to 31)
- dd: Number (decimal number from 01 to 99)

(b) Prototype

The data version number DATA_VERSION_aa-bbbbb is assigned, where the underscore (_) is a space character. This number is unique on an the lot of each manufacturers basis. This number must be changed when the situation described in (a) occurs.

aa: Media code

bbbb:Serial number

To align the data length to 32 words, the remaining blanks are padded with 0(16)/one word.

The character types of the data to be stored are:

aa: Alphabet

bbbb: Number (decimal number from 00001 to 99999)

(6) Disk Title

No particular specification.

(7) Data Contents

Word 0

No.	Bit	Description		Remarks
1	15	Main Map	0:Not stored	International common data
2	14	Route Planning	1:Stored	
3	13	Index Data		
4	11 to 0	(RESERVED)		

Word 1

No.	Bit	Description		Remarks
1	15 to 0	(RESERVED)	0:Not stored 1:Stored	Country/Region common data

Word 2

No.	Bit	Description		Remarks
1	15 to 0	(RESERVED)	0:Not stored 1:Stored	Common to group companies

Word 3

No.	Bit	Description		Remarks
1	15 to 0	(RESERVED)	0:Not stored 1:Stored	System dependent

(8) Media Version Number

The media version number is Vaa.bb.cc. This is a unique number assigned to each medium which stores map data. When the specification is revised, a new version number aa.bb.cc is assigned according to the rules below:

- aa: Increased when the application program or the map data are amended significantly. The system checks the version number conformability.
- bb: Increased when a minor change is applied to the application program or the map data. The system checks the version number conformability
- cc: Increased when minor problems in the application program or the map data are cleared or when maintenance is made. This number change does not affect the performance of application programs (especially the implementation function). The system does not check the version number conformability.

To align the data length to 16 words, the remaining blanks are padded with 0(16)/one word.

The character types of the data to be stored are:

aa: Number (decimal number from 00 to 99)

bb: Number (decimal number from 00 to 99)

cc: Number (decimal number from 00 to 99)

If the wild code (*) is used, the system check can be evaded.

Note: In Japan, a different method might be used.

(9) Data Coverage

The country/region identification means the data coverage area.

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	8	PID	Lower Left Latitude and Longitude of the Maximum Coverage Area		
2	8	8	PID	Upper Right Latitude and Longitude of the Maximum Coverage Area		

(10) Logical Sector Size

This field describes the byte counts per sector.

(11) Sector Size

This field describes the byte counts per sector.

(12) Maker Identification

name [Maker Identification]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	8	PID	Latitude and Longitude of the Maker's Office Location		
2	8	1	I	The Floor Information of the Maker's Office (A number with a plus or minus sign relative to the ground level (0))		
3	9	1		(RESERVED)		
4	10	2	N	Date when the Maker Identification is Set (Relative number of days counts from the day 0 which is January 1 in 1997)		

If the data is system-independent, all the above fields are filled up with FF(16)/1.

(13) Background Data Default Information

No.	Bit	Description		Remarks
1	15	Default of the Background Data of the Parcel containing the Main Map Data Frame.	0:Land 1:Sea	
2	14	Default of the Background Data of the Parcel containing No Main Map Data Frame.		
3	13 to 0	(RESERVED)		

5.1.1 Level Management Information

The level management information indicates the hierarchy structure (levels) of parcels of parcel-related management data stored on this medium and the management method.

name [Level Management Information]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	2	N	Number of Data Types (r)	(1)	
2	2	B1		A Sequence of Data Level Information (#1 to #r)		c

(1) Number of Data Types

The number of data types indicates the number (r) of data items (parcel-related management data) described below.

5.1.1.1 Description of Each Data Items

Types of data items, the total number of structure levels, and the level information for each of the structure levels are described below.

name [Data Level Information]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	2	B:N	Level Management Header		a
2	2	B1		A Sequence of Level Information	(1)	a

(1) A Sequence of Level Information

The values of level numbers are sorted in the descending order of the levels.

5.1.1.1.1 Level Management Header

This header contains the relevant data types and the total number of levels (n).

No.	Bit	Description
1	15 to 8	Data Type (1)
2	7 to 0	Total Number of Levels

(1) Data Type

Data types are indicated by the following codes:

Code	Meaning
00(16)	(RESERVED)
01(16)	Main Map Data
02(16)	Route Guidance Data
03(16)	Route Planning Data
04(16)	Additional Data Frame A
05(16)	Additional Data Frame B
06(16) and the	(RESERVED)

5.1.1.1.2 Information of Each Level

The level number and the total number of block management records of each level are described.

name [Information of Each Level]

No.	Offset	Length	Data type	Item name	Remarks	Classification
1	0	2	I:	Level Number		a
2	2	2	N	Total Number of Block Management Records	(1)	a

(1) Total Number of block Management Records

The number of block management records should be within 1 to 65535.

5.1.1.1.2.1 Level Number

No.	Bit	Description
1	15 to 8	Level Number (1)
2	7 to 0	(RESERVED)

(1) Level Number

The level number should be within –32 to 31.

5.2 Management Header Table

name [Management Header Table (A Sequence of Management Header Records)]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	18		Management Header Record 1 (Parcel-related Data Management)		b
2	18	18		Management Header Record 2 (Region-related Data Management)		b
3	36	18		Management Header Record 3 (Index Data Management)		b
4	54	18		Management Header Record 4 (Management of Various Parameters)		b
5	72	18		Management Header Record 5 (Management of Data corresponding to Infrastructure)		
6	90	18		Management Header Record 6 (Graphics Data Management)		b
7	108	18		Management Header Record 7 (Voice Data Management)		b
8	126	18		Management Header Record 8 (RESERVED)		b
9	144	18		Management Header Record 9 (RESERVED)		b
10	162	18		Management Header Record 10 (RESERVED)		b
11	180	18		Management Header Record 11 (RESERVED)		b
12	198	18		Management Header Record 12 (RESERVED)		b
13	216	18		Management Header Record 13 (RESERVED)		b
14	234	18		Management Header Record 14 (RESERVED)		b
15	252	18		Management Header Record 15 (RESERVED)		b
16	270	18		Management Header Record 16 (RESERVED)		b
17	288	18		Management Header Record 17 (RESERVED)		b
18	306	18		Management Header Record 18 (RESERVED)		b
19	324	18		Management Header Record 19 (RESERVED)		b
20	342	18		Management Header Record 20 (RESERVED)		b
21	360	18		Management Header Record 21 (RESERVED)		b
22	378	18		Management Header Record 22 (RESERVED)		b
23	396	18		Management Header Record 23 (RESERVED)		b
24	414	18		Management Header Record 24 (RESERVED)		b
25	432	18		Management Header Record 25 (RESERVED)		b
26	450	18		Management Header Record 26 (RESERVED)		b
27	468	18		Management Header Record 27 (RESERVED)		b
28	486	18		Management Header Record 28 (RESERVED)		b
29	504	18		Management Header Record 29 (RESERVED)		b
30	522	18		Management Header Record 30 (RESERVED)		b
31	540	18		Management Header Record 31 (RESERVED)		b
32	558	18		Management Header Record 32 (RESERVED)		b
33	576	18		Management Header Record 33 (Maker Original: RESERVED)		b
34	594	1454		Management Header Record 34 (maker Original: RESERVED)		b

The management header table consists of the basic part (common to all KIWI specifications ^{#1}), the extended part 1 (common to the manufacturers - group consortium ^{#2}), and the extended part 2 (maker's original definitions ^{#3}). The basic part composed of the records No. 1 to 16, the extended part 1 is composed of the records 17 to 32, and the extended part 2 is composed of the records No. 33 to 48.

If the expansion is required, use the No.8 record area and place it in the sequence in the same manner as the existing records.

The sequence and the number of the management header records are defined with META.

name [Management Header Records]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	DSA	Address of the Management Header	(1)	b
2	4	2	BS	Size of the Management Header	(2)	b
3	6	12	C	Management File Name	(3)	b

(1) Address of the Management Header

This field describes the relative sector address of the management frame of each data item. If the management file name (No.3) is blank, a sector address relative to the beginning (address 0) of all data management frames is stored. If a management file name is specified, the relative sector address is the offset from the beginning of the specified management file.

(2) Size of the Management Header

This field describes the size of the management section for each data item.

No	Management Information type	Size of the management header
1	Parcel-related Data Management	The number of logical sectors as the size of the parcel-related data management distribution header.
2	Region-related Data Management	The number of logical sectors as the size of the region-related data management distribution header.
3	Index Data Management	The number of logical sectors as the size of the data management header.
4	Management of Various Parameters	The number of logical sectors as the size of the parameters distribution header.

(3) Management File Name

When more than one file exist, their management file names are specified. The file name length should be 12 bytes including the extension. The name should be left-justified and the remaining bits should be padded with 00(16). When no relevant file exists, 00(16) is assigned to this field.

^{#1} : The basic part is common to all makers that use the KIWI format for their products.

^{#2} : The part is common to the manufacturers that delivers their products to the same car maker.

^{#3} : This part is used for the additional descriptions of each maker.