FORMAT OF VISSR ARCHIVE DATA

VISSR raw data are archived at MSC in digital form.

1. VISSR IR Data

Global VISSR IR image data file is composed of northern hemisphere and southern hemisphere data. It consists of IR1, IR2 and WV. A half inch CMT (Cartridge Magnetic Tape) contains four day's data.

Start times of VISSR data (28 observations per day) are as follows.
00 : 32, 01 : 32, 02 : 32, 03 : 32, 04 : 25, 05 : 02, 05 : 32, 06 : 32, 07 : 32, 08 : 32, 09 : 32
10 : 25, 11 : 02, 11 : 32, 12 : 32, 13 : 32, 14 : 32, 15 : 32, 16 : 25, 17 : 02, 17 : 32, 18 : 32
19 : 32, 20 : 32, 21 : 32, 22 : 25, 23 : 02, 23 : 32 UTC

(1) File specifications

Items	Specifications	Comments
Density	76,000 BPI	36 Tracks
File label	Standard label	
File type	Multi-file	
Block length	3,664 Bytes	Fixed length
Transfer mode	8 bits	

(2) File composition

BLK#		
1 ~ 2	CONTROL BLOCK	
	2688 bytes	976 bytes
3	Mode record	not used
4	Information of S/DB operation	not used
5	Coordinate transformation parameters	not used
6	Attitude prediction data	not used
7	Orbit prediction data (1)	not used
8	Orbit prediction data (2)	not used
9	DCD Communication	not used
10	VIS calibration	not used
11	IR1 calibration	not used
12	IR2 calibration	not used
13	WV calibration	not used
14	Split window calibration	not used
15	Reserved	not used
16	Reserved	not used

(continued)

17	Simple coordinate transformation + Return code		not used
18	β-angle sampling		not used
19~final	LCW	DOC	Image data

(3) File contents

BLK# 1~2 Control block

Position (bytes)	ITEMS	CONTENTS	Type
1 ~ 2	Control block size	Block size of IR image data file=2	I*2
3 ~ 4	Head block number of parameter block	Parameter block number of IR image data file=3	I*2
5 ~ 6	Parameter block size	Parameter block size of IR image data file=16	I*2
7 ~ 8	Head block number of image data	Parameter block number of IR image data file=19	I*2
9 ~10	Total block size of image data	Total block size of image data	I*2
11~12	Available block size of image data	Normal line number of image data	I*2
13~14	Head valid line number	Head line number of image data	I*2
15~16	Final valid line number	Line number of final input valid data	I*2
17~18	Final data block number	Block number of final input data	I*2
19~32	Reserved		
33~	Address table	Block number of available data. (−1=not available)	I*2

BLK# 3~18 Image parameter block same as File composition.

BLK# 19~final Image data block. From the first to the 64th bytes are line control words (LCW).

Image data block

LCW (Line Control Word) section

Position (bytes)	ITEMS	CONTENTS	Type
1 ~ 4	Data ID	Higher 16 bits=Image segment, Lower 16 bits=Data segment Image segment 0000=standard (part) observation 0008=test observation Data segment 0001=IR 1ch 0002=IR 2ch 0004=IR 3ch 0008=VIS 1ch 0010=VIS 2ch 0020=VIS 3ch 0040=VIS 4ch 0000=others	
5 ~ 8	Line number	Added by VISSR collection signal	I
9 ~12	Line name	Contents of VISSR data 01=VISSR image data 08=test 10=annotation data 20=gray scale data	I
13~16	Error line flag	Normal/Error line 0000=normal line	I
17~20	Error message	Massage number of S/DB mode error. 0=normal	I
21~24	Mode error flag	Bit data of S/DB mode error. 0=normal	I
25~32	Scan time	MJD (Modified Julian Day) of VISSR scan time	R*8
33~36	Beta angle	Sun-Earth angle in radian	R*8
37~40	West side earth edge	Pixel position of west side earth edge	I
41~44	East side earth edge	Pixel position of east side earth edge	I
45~52	Received time (1)	Received time of host side (2I6 type)	I
53~56	Received time (2)	Received time of host side in milli-seconds	I
57~64	Reserved		

DOC (Document) Section

Position (bytes)	ITEMS	CONTENTS	Type
65~320	DOC	Omitted	

Image data section

Position (bytes)	ITEMS	CONTENTS	Type
321~	Image data	Brightness value of each pixel (one byte/pixel)	Binary

2. VISSR VIS data

Global VISSR visible image data file is composed of northern hemisphere and southern hemisphere data. A half inch CMT (Cartridge Magnetic Tape) contains one day's data.

Start times of VISSR data (16 observations per day) are as follows.

00 : 32, 01 : 32, 02 : 32, 03 : 32, 04 : 25, 05 : 02, 05 : 32, 06 : 32, 07 : 32, 08 : 32, 15 : 32, 20 : 32, 21 : 32, 22 : 25, 23 : 02, 23 : 32 UTC

(1) File specification

Items	Specification	Comments
Density	76,000BPI	36 Track
File label	Standard label	
File type	Multi-file	
Block length	13,504 bytes	Fixed length
Transfer mode	8 bits	

(2) File composition

BLK#

1 ~ 2 | CONTROL BLOCK |

3	Mode record (2688 bytes)	Information of S/DB operation (2688 bytes)	Coordinate transformation parameters (2688 bytes)	Attitude prediction data (2688 bytes)	Not used (2752 bytes)
4	Orbit prediction data (1) (2688 bytes)	Orbit prediction data (2) (2688 bytes)	Information of DCD communication (2688 bytes)	VIS calibration (2688 bytes)	Not used (2752 bytes)
5	IR1 calibration (2688 bytes)	IR2 calibration (2688 bytes)	WV calibration (2688 bytes)	Split window calibration (2688 bytes)	Not used (2752 bytes)
6	Reserved (2688 bytes)	Reserved (2688 bytes)	Simple coordinate transformation table (2688 bytes)	β-angle sampling (2688 bytes)	Not used (2752 bytes)

The return codes of VZ4000 and VACTBL are written in the last.

7 ~final	LCW	DOC	Image data

(3) File contents

BLK#

1 ~ 2 | CONTROL BLOCK

Position (bytes)	ITEMS	CONTENTS	Type
1 ~ 2	Control block size	Block size of VIS image data file=2	I*2
3 ~ 4	Head block number of parameter block	Parameter block number of VIS image data file=3	I*2
5 ~ 6	Parameter block size	Parameter block number of VIS image data file=4	I*2
7 ~ 8	Head block number of image data	Parameter block number of VIS image data file=7	I*2
9 ~10	Total block line of image data	Total block size of image data	I*2
11~12	Available block size of image data	Normal line number of image data	I*2
13~14	Head valid line number	Head line number of image data	I*2
15~16	Final valid line number	Line number of final input available data	I*2
17~18	Final data block number	Block number of final input data	I*2
19~32	Reserved		
33~	Address table	Block number of available data (−1=not available)	I*2

BLK# 3~18 Image parameter block same as File composition of VISSR IR data.

BLK# 19~final Image data block. From the first to the 64th bytes are line control words (LCW).

LCW (Line Control Word)

Position (bytes)	ITEMS	CONTENTS	Type
1 ~ 4	Data ID	Higher 16 bits=Image segment, Lower 16 bits=Data segment Image segment 0000=standard (part) observation 0008=test observation Data segment 0001=IR 1ch 0002=IR 2ch 0004=IR 3ch 0008=VIS 1ch 0010=VIS 2ch 0020=VIS 3ch 0040=VIS 4ch 0000=others	
5 ~ 8	Line number	Added by VISSR collection signal	I
9 ~12	Line name	Contents of VISSR data 01=VISSR image data 08=test 10=annotation data 20=gray scale data	I
13~16	Error line flag	Normal/Error line 0000=normal line	I
17~20	Error message	Massage number of S/DB mode error. 0=normal	I
21~24	Mode error flag	Bit data of S/DB mode error. 0=normal	I
25~32	Scan time	MJD (Modified Julian Day) of VISSR scan time	R*8
33~36	Beta angle	Sun-Earth angle in radian	R*8
37~40	West side earth edge	Pixel position of west side earth edge	I
41~44	East side earth edge	Pixel position of east side earth edge	I
45~52	Received time (1)	Received time of host side (2I6 type)	I
53~56	Received time (2)	Received time of host side in milli-seconds	I
57~64	Reserved		

DOC (Document) Section

Position (bytes)	ITEMS	CONTENTS	Type
65~128	DOC	Omitted	

Image data section

Position (bytes)	ITEMS	CONTENTS	Type
129~	Image data	Brightness value of each pixel (one byte/pixel)	Binary

3. VISSR typhoon short time observation data.

Six days image data (VIS,IR1,IR2,WV) of VISSR typhoon short time observation are archived in a half inch CMT.

Start times of data (3 observations per day) are 03 : 32, 03 : 47, 04 : 02 UTC.

Table-1 Image parameter block

① Mode record

Position (word)	ITEMS	CONTENTS	Type
1	Satellite number	Serial number of satellite	I
2 ~ 4	Satellite name	Satellite name (≦8 letters)	EBCDIC
5 ~ 8	Observation time	AD (UTC)	EBCDIC
9 ~10	Observation time	MJD	R*8
11	GMS operation mode	1=S1 6=S6 7=S7 0=not specified	I
12	DPC operation mode	1=automatic 2=manual	I
13	VISSR observation mode	1=scheduled 2=wind vectors 3=unscheduled 4=special	I
14	Scanner selection	1=primary-1 11=primary-2 2=redundant-1 12=redundant-2 0=not specified	
15	Sensor selection	Used sensor (70digit decimal) 10^6 10^5 10^4 10^3 10^2 10^1 10^0 IR1 | IR2 | WV1 | VIS1 | VIS2 | VIS3 | VIS4 0=not specified 1=primary 2=redundant	I
16	Sensor mode	Selection of VIS/IR (IR1,IR2,WV) MSB 31 ..... LSB 0 ..... | IR | VIS 0=not used 1=used (control parameter)	I
17	Scan frame mode	1=normal frame (2500 steps) 2=expanded frame (2756 steps) 0=not specified	I
18	Scan mode	1=normal scan 2=partial scan 3=single scan 0=not specified	I
19	Upper limit of scan line	Scan line number of upper limit	I
20	Lower limit of scan line	Scan line number of lower limit	I
21	Equatorial scan line number	Line number of equatorial scan	I
22	Spin rate	Rotational rate (spins/minute)	R

(continued)

23	VIS frame parameters	Bit length	I
24		Number of lines	I
25		Number of pixels	I
26		Stepping angle	R
27		Sampling angle	R
28		LCW-pixel size	I
29		DOC-pixel size	I
30		reserved	
31~38	IR frame parameters	Same as above	I,R
39	Satellite height	Nominal height of satellite (3.59×10^7 m)	R
40	Earth radius	Earth radius (6.3702895×10^6m)	R
41	SSP-longitude	Nominal SSP-longitude	R
42~50	Reserved		
51	Table of sensor trouble (1=VISSR sensor is available)	VIS primary 1ch	I
52		VIS primary 2ch	I
53		VIS primary 3ch	I
54		VIS primary 4ch	I
55		VIS redundant 1ch	I
56		VIS redundant 2ch	I
57		VIS redundant 3ch	I
58		VIS redundant 4ch	I
59		IR 1 primary	I
60		IR 1 redundant	I
61		IR 2 primary	I
62		IR 2 redundant	I
63		WV primary	I
64		WV redundant	I
65~100	Reserved		

(continued)

101~160	Status tables of data segment	Relative address 0 Data segment 1 Data presence 2 Generated 3 day & time 【Data segment】 1=Information of S/DB operation 2=Parameters for coordinate transformation 3=Attitude prediction data 5=Orbit prediction data (1),(2) 6=DCD communication data 7=VIS calibration 8=IR1 calibration 9=IR2 calibration 10=WV calibration 11=Split window calibration (reserved) 12~14=Reserved 15=β-angle sampling (reserved) 【Data presence】 1=Exist 2=Not exist 【Data generation time】 YYMMDD date hhmmss time	I
161 - 672	Reserved		

① Coordinate conversion parameters segment

Position (word)	ITEMS	CONTENTS	Type
1	Data segment	2=Coordinate transformation parameters	I
2	Reserved		
3 ~ 4	Data generation time	Generation time of this block's parameters 3 YYMMDD date 4 hhmmss time	I
5 ~ 6	Scheduled observation time	Scheduled observation time (MJD)	R*8
7	Stepping angle along line	VIS channel	R
8		IR1 channel	R
9		IR2 channel	R
10		WV channel	R

(continued)

11	Sampling angle along pixel	VIS channel	R
12		IR1 channel	R
13		IR2 channel	R
14		WV channel	R
15	Central line number of VISSR frame	VIS channel	R
16		IR1 channel	R
17		IR2 channel	R
18		WV channel	R
19	Center pixel number of VISSR frame	VIS channel	R
20		IR1 channel	R
21		IR2 channel	R
22		WV channel	R
23	Pixel difference of VISSR center from the normal position	VIS channel	R
24		IR1 channel	R
25		IR2 channel	R
26		WV channel	R
27	Number of sensor elements	VIS channel	R
28		IR1 channel	R
29		IR2 channel	R
30		WV channel	R
31	Total number of VISSR frame lines	VIS channel	R
32		IR1 channel	R
33		IR2 channel	R
34		WV channel	R
35	Total number of VISSR frame pixels	VIS channel	R
36		IR1 channel	R
37		IR2 channel	R
38		WV channel	R
39~41	VISSR misalignment	39 x-component : δ a	R
		40 y-component : δ b	
		41 z-component : δ c	

(continued)

42~50	Matrix of misalignment	$ELMIS=\begin{bmatrix} \cos\delta\ c & \sin\delta\ c & 0 \\ -\sin\delta\ c & \cos\delta\ c & 0 \\ 0 & 0 & 1 \end{bmatrix}$ $\begin{bmatrix} \cos\delta\ b & 0 & -\sin\delta\ b \\ 0 & 1 & 0 \\ \sin\delta\ b & 0 & \cos\delta\ b \end{bmatrix} \times \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\delta\ a & \sin\delta\ a \\ 0 & -\sin\delta\ a & \cos\delta\ a \end{bmatrix}$ $ELMIS(1,1)=CC\times CB$ $ELMIS(2,1)=-SC\times CB$ $ELMIS(3,1)=SB$ $ELMIS(1,2)=CC\times SB\times SA+SC\times CA$ $ELMIS(2,2)=-SC\times SB\times SA+CC\times CA$ $ELMIS(3,2)=-CB\times SA$ $ELMIS(1,3)=-CC\times SB\times CA+SC\times SA$ $ELMIS(2,3)=SC\times SB\times CA+CC\times SA$ $ELMIS(3,3)=CB\times CA$ where, $SA=\sin\delta\ a$ $CA=\cos\delta\ a$ $SB=\sin\delta\ b$ $CB=\cos\delta\ b$ $SC=\sin\delta\ c$ $CC=\cos\delta\ c$	R
51	Parameters	Judgement of observation convergence time	R
52		Judgement of line convergence	R
53		E-W angle of Sun-light condense prism	R
54		N-S angle of Sun-light condense prism	R
55		$\pi=3.141592$	R
56		$\pi/180=0.017453292$	R
57		$180/\pi=57.295780$	R
58		Equatorial radius=6377397.2	R
59		Oblateness of the earth=0.0033427731	R
60		Eccentricity of the earth orbit=0.081696829	R
61		First angle of VISSR observation in S/DB	R
62		Upper limited line of the 2nd prism for VIS solar observation	R
63		Lower limited line of the 1st prism for VIS solar observation	R
64		Upper limited line of the 3rd prism for VIS solar observation	R
65		Lower limited line of the 2nd prism for VIS solar observation	R
66	Stepping angle along line	VIS solar observation	R
67		IR solar observation	R
68	Sampling angle along pixel	VIS solar observation	R
69		IR solar observation	R
70	Center line of VISSR frame	VIS solar observation	R
71		IR solar observation	R
72	Center pixel of VISSR frame	VIS solar observation	R
73		IR solar observation	R

(continued)

74 75	Pixel difference of VISSR center from the normal position	VIS solar observation IR solar observation	R R
76 77	Sensor elements number	VIS solar observation IR solar observation	R R
78 79	Total number of VISSR frame lines	VIS solar observation IR solar observation	R R
80 81	Total number of pixels / lines of VISSR frame	VIS solar observation IR solar observation	R R
82~100	Reserved		
101 - 102	Orbital parameters	Epoch time	R*8
103 - 104		Semi-major axis (km)	R*8
105 - 106		Eccentricity	R*8
107 - 108		Orbital inclination (deg)	R*8
109 - 110		Longitude of the ascending node (deg)	R*8
111 - 112		Argument of perigee (deg)	R*8
113 - 114		Mean anomaly (deg)	R*8
115 - 116		Longitude of SSP (deg)	R*8
117 - 118		Latitude of SSP (deg)	R*8
119 - 120	Reserved		
121 - 122	Attitude parameters	Epoch time (MJD)	R*8
123 - 124		Angle between Z-axis and satellite spin axis at the epoch time	R*8
125 - 126		Angle change rate between spin axis and Z-axis	R*8
127 - 128		Angle between spin axis and ZY-axis	R*8
129 - 130		Angle change rate between spin axis and ZY-axis	R*8
131 - 132		Daily mean of spin rate (RPM)	R*8
133 - 661	Reserved		
662	Correction of image distortion	Stepping angle along line of IR1 (rad)	R
663		Stepping angle along line of IR2 (rad)	R
664		Stepping angle along line of WV (rad)	R
665		Stepping angle along line of VIS (rad)	R
666		Sampling angle along pixel of IR1 (rad)	R
667		Sampling angle along pixel of IR2 (rad)	R
668		Sampling angle along pixel of WV (rad)	R
669		Sampling angle along pixel of VIS (rad)	R
670		X component of VISSR misalignment (rad)	R
671		Y component of VISSR misalignment (rad)	R
672		Z component of VISSR misalignment (rad)	R

Attitude prediction

Position (word)	ITEMS	CONTENTS	Type
1	Data segment	3=Attitude prediction data	I
2	Reserved		
3 ~ 4	Data generation time	3 YYMMDD date 4 hhmmss time	I
5 ~ 6	Start time	Start time of attitude prediction (MJD)	R*8
7 ~ 8	End time	End time of attitude prediction (MJD)	R*8
9 ~10	Prediction interval time	Interval time of attitude prediction (MJD)	R*8
11	Number of prediction	Number of attitude prediction	I
12	Data size	Number of attitude prediction data set	I
13~672	Attitude prediction data	Attitude prediction data 1~33 (See table ③-1)	

Table ③-1 Contents of attitude prediction data

Position (word)	ITEMS	CONTENTS	Type
0 ~ 1	Prediction time	Prediction time (MJD)	R*8
2 ~ 3	Prediction time	Prediction time (UTC) 2 YYMMDD date 3 hhmmss time	I
4 ~ 5	Right ascension of attitude	Predicted right ascension of attitude (rad)	R*8
6 ~ 7	Declination of attitude	Predicted declination of attitude (rad)	R*8
8 ~ 9	Sun-earth angle	Sun-earth angle at prediction time	R*8
10~11	Spin rate	Satellite spin rate at prediction time	R*8
12~13	Right ascension of orbital plane	Right ascension of orbital plane at prediction time	R*8
14~15	Declination of orbital plane	Declination of orbital plane at prediction time	R*8
16~17	Reserved		
18	Eclipse flag	0=Out of eclipse period, 1=In eclipse period	I
19	Spin axis flag	0=within 0.5 degree, 1=beyond 0.5 degree	I

④ Orbit prediction

Position (word)	ITEMS	CONTENTS	Type
1	Data segment	5=Orbit prediction data	I
2	Reserved		
3 ~ 4	Data generation time	3 YYMMDD date 4 hhmmss time	I
5 ~ 6	Start time	Start time of orbit prediction (MJD)	R*8
7 ~ 8	End time	End time of orbit prediction (MJD)	R*8
9 ~10	Prediction interval time	Interval time of orbit prediction (MJD)	R*8
11	Number of prediction	Number of orbit prediction	I
12	Data size	Number of orbit prediction data set	I
13~642	Attitude prediction data	Orbit prediction data 1~9 (See table ④-1)	
643 - 672	Reserved		

Table ④-1 Contents of orbit prediction data

Position (word)	ITEMS	CONTENTS	Type
0 ~ 1	Prediction time	Prediction time (MJD)	R*8
2 ~ 3	Prediction time	Prediction time (UTC) 2 YYMMDD date 3 hhmmss time	I
4 ~ 5	Satellite position and velocity in the 1950.0 yearly mean inertial coordinate system	X-component of position	R*8
6 ~ 7		Y-component of position	R*8
8 ~ 9		Z-component of position	R*8
10~11		X-component of velocity	R*8
12~13		Y-component of velocity	R*8
14~15		Z-component of velocity	R*8
16~17	Satellite position and velocity in the earth-fixed coordinate system	X-component of position	R*8
18~19		Y-component of position	R*8
20~21		Z-component of position	R*8
22~23		X-component of speed	R*8
24~25		Y-component of speed	R*8
26~27		Z-component of speed	R*8

(continued)

28~29	Greenwich sidereal time		R*8
30~33	Sun-directional vector	Vector from Satellite to Sun in 1950.0 yearly mean inertial coordinate system 30~31 Azimuth 32~33 Elevation	 R*8 R*8
34~37	Sun-directional vector	Vector from Satellite to Sun in the earth-fixed coordinate system 34~35 Azimuth 36~37 Elevation	 R*8 R*8
38~55	Conversion matrix A1~A9	Matrix to convert from 1950.0 yearly mean inertial coordinate system(X,Y,Z) to the earth-fixed coordinate system(x,y,z) $\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} A1 & A4 & A7 \\ A2 & A5 & A8 \\ A3 & A6 & A9 \end{bmatrix} \begin{bmatrix} X \\ Y \\ Z \end{bmatrix}$	R*8
56~61	Moon directional vector	Vector from Satellite to Moon in 1950.0 yearly mean inertial coordinate system 56~57 X-component of vector 58~59 Y-component of vector 60~61 Z-component of vector	 R*8 R*8 R*8
62~63 64~65 66~67	Satellite position	Latitude of SSP Longitude of SSP Satellite height	R*8 R*8 R*8
68	Eclipse period flag	0=out of eclipse period, 1=In eclipse period	I
69	Reserved		

⑤ VIS Calibration data

Position (word)	ITEMS	CONTENTS	Type
1	Data segment	7=VIS calibration	I
2	Data validity	1=available (At least one channel is available) 2=not available (4 channels are not available)	I
3 ~ 4	Data generation time (UTC)	3 [YYMMDD] date 4 [hhmmss] time	I
5	Sensor group	Sensor group calibration table of primary or redundant Bit position 3 2 1 0(LSB) [VIS ch.1][VIS ch.2][VIS ch.3][VIS ch.4] 1=primary 2=redundant	I

(continued)

6~405	VIS 1~4 ch calibration table	See Table ⑤-1
406 - 672	Reserved	

Table ⑤-1 Contents of VIS channel calibration table

Position (bytes)	ITEMS	CONTENTS	Type
0	Channel number	channel number=1~4	I
1	Data validity	1=utilization possible 2=utilization impossible	I
2 ~ 3	Updated time	YYMMDD date hhmmss time	I
4	Table ID	Increment when the table is updated.	I
5 ~68	Brightness-albedo conversion table	Brightness=0 Albedo 1 Albedo 63 Albedo Albedo=0~1	R
69~74	VIS channel staircase brightness data	Brightness and voltage used to calculate the electric calibration regression curve	R
75~84	Coefficients table of VIS staircase regression curve	Coefficients of VIS staircase regression curve	R
85~86	Brightness table for Calibration	85 Universal space brightness 86 Solar brightness	R
87~88	Calibration uses brightness correspondence voltage chart	87 Universal space voltage 88 Solar voltage	R
89~90	Calibration coefficients of radiation observation	Equation of calibration of radiation observation is $V=G\cdot E+V_0$ 89 G 90 V_0	R
91~99	Reserved		

Table ⑥ VIS 1 · VIS 2 · WV calibration record

Position (bytes)	ITEMS	CONTENTS	Type
1	Data segment	8=VIS 1 calibration record 9=VIS 2 calibration record 10=WV calibration record	I
2	Data validity	1=available 2=not available	I
3 ~ 4	Updated time	3 YYMMDD date 4 hhmmss time	I
5	Sensor group	1=primary 2=redundant	I
6	Table ID	Calibration table ID. Increment when the table is updated.	I
7 ~ 8	Reserved		
9 ~264	Conversion table of equivalent black body radiation	Radiation ($W/cm^2\ sr\cdot\mu m$) to brightness Brightness=0 Radiation 1 Radiation 255 Radiation	R
265~520	Conversion table of equivalent black body temperature	Temperature (K) to brightness Brightness=0 Temperature 1 Temperature 255 Temperature	R
521~526	Staircase brightness data	Brightness and voltage used to calculate regression curve for electric correction	R
527~536	Coefficients table of Staircase regression curve	Coefficients table of staircase regression curve	R
537	Brightness data for calibration	Brightness of space	R
538		Brightness of black body shutter	R
539		Reserved	R
540	Voltage table for brightness of calibration	Voltage of space	R
541		Voltage of black body shutter	R
542		Reserved	R

(continued)

543~544	Calibration coefficients of radiation observation	Equation of calibration of radiation observation is $V=G\cdot E+V_0$ 89 G 90 V_0	R
545	Valid shutter temperature	Valid shutter temperature (K)	R
546	Valid shutter radiation	Valid shutter radiation ($W/cm^2\ sr\cdot\mu m$)	R
547~562	Telemetry data table	Telemetry data of calibration and VISSR temperature. Telemetry data are defined by flags of valid shutter temperature calculation method of picture coefficients file.	R

relative word	mark	flag=0 GMS-3	flag=1 GMS-4	flag=2 GMS-5
0	T_1	shutter temp.1 (℃)	shutter temp. (℃)	shutter temp.1 (℃)
1	T_2	shutter temp.2 (℃)	redundant mirror temp. (℃)	
2	T_3	scanner temp.1 (℃)	primary mirror temp. (℃)	
3	T_4	scanner temp.2 (℃)	baffle FW temp. (℃)	
4	T_5	scanner temp.2 (℃)	baffle AF temp. (℃)	
5	—	+15 volt auxiliary power supply (V)		
6	—	radiative cooler temp.1 (K)		
7	—	radiative cooler temp.2 (K)		
8	—	electronics module temp (℃)		
9	T_{10}	reserved		scan mirror temp. (℃)
10	T_{11}	reserved		shutter cavity temp. (℃)
11	T_{12}	reserved		Primary mirror aperture stop temp. (℃)
12	T_{13}	reserved		Redundant mirror sealed temp. (℃)
13	T_{14}	reserved		shutter temp.2 (℃)
14		reserved		
15		reserved		

563	Flag of valid shutter temperature calculation	0=GMS-3 method 1=GMS-4 method 2=GMS-5 method	I
564~672	Reserved		

⑦ Split window calibration record is wholly set by 0.

Table ⑧ Simple coordinate conversion table

Position half word	ITEMS	CONTENTS	Type
1	60°N, 80°E IR1 line number	Calculated by coordinate conversion (ZGCG00)	I
2	60°N, 80°E IR1 pixel number		
3	60°N, 85°E IR1 line number		
4	60°N, 85°E IR1 pixel number		
⋮			
51	55°N, 80°E IR1 line number		
52	55°N, 80°E IR1 pixel number		
53	55°N, 85°E IR1 line number		
54	55°N, 85°E IR1 pixel number		
⋮			
1249	60°S, 160°W IR1 line number		
1250	60°S, 160°W IR1 pixel number		

Position word	ITEMS	CONTENTS	Type
626	Earth equator radius (m)	Retrieved from coordinate conversion block (58 th word) of image data file	R
627	Satellite height (m)	Retrieved from orbit prediction block (78th word) of image data file	R
628	Stepping angle (rad)	Retrieved from coordinate conversion block (8th word) of image data data file	R
629	Sampling angle (rad)	Retrieved from coordinate conversion block (12 nd word) of image data file	R
630	SSP-latitude (deg)	Calculated by coordinate conversion (ZGCG00)	R
631	SSP-longitude (deg)		R
632	SSP-line number		
633	SSP-pixel number		

(continued)

634	π	Retrieved from coordinate conversion block (12 nd word) of image data file	R
635	line correction (X) IR1-VIS	Calculated by conversion of coordinates of SSP (lat/lon) X=Lvis-(Lir1-1)*4-2.5 Lvis : VIS sensor line number Lir1 : IR1 sensor line number	R
636	Pixel correction (Y) IR1-VIS	Y=Pvis-(Pir1-1)*4-2.5 Pvis : VIS sensor pixel number Pir1 : IR1 sensor pixel number	R
637	Line correction (X) IR1-IR2	X=Lir2-Lir1 Lir2 : IR2 sensor line number Lir1 : IR1 sensor line number	R
638	Pixel correction (Y) IR1-IR2	Y=Pir2-Pir1 Pir2 : IR2 sensor pixel number Pir1 : IR1 sensor pixel number	R
639	Line correction (X) IR1-WV	X=Lwv-Lir1 Lwv : WV sensor line number Lir1 : IR1 sensor line number	R
640	Pixel correction (Y) IR1-WV	Y=Pwv-Pir1 Pwv : WV sensor pixel number Pir1 : IR1 sensor pixel number	R
641~669	Reserved		
670 (*1)	Flag of VZ4000	Flag set by the return code of the subroutine VZ4000 1=return code is 0 or 6 2=except above	R
671 (*1)	Return code of VZ4000	Return code of the sudroutine VZ4000	R
672 (*1)	Return code of simple coordinate conversion	Return code of the subroutine VACTBL	R

(*1) VIS imagery data are located on 670~672 word of β-angle sampling record until 16 October 1995.

⑨ β angle sampling - Omitted.