

SIM RC SECTION

Contents

SIMRC01-10	1. Reference Code
SIMRC02-10	2. Reference Codes
SIMRC02-20	2.1 SIM Reference Codes Detected by the Processor
SIMRC02-460	2.2 SIM Reference Codes Detected by the SVP
SIMRC03-10	3. SIM Format

1. Reference Code

A six-byte reference code (RC) is provided for a SIM (service information message) to identify an error and error section. The following shows 32 SIM bytes and reference codes.

Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SIM SSB	00	90	10	00	00	00	8F	E0	44	10	00	04	00	80	04	0C	69	00	00	00	00	02	30	70	05	10	42	C0	F1	00	02	00

Indicates SIM.

SSB13

SSB22, 23

SIM type
 F1: DKC SIM
 F2: CACHE SIM
 FE: DEVICE SIM
 FF: MEDIA SIM

RC = 307080

2. Reference Codes

SIMs are roughly classified into two types: SIMs detected by the processor and SIMs detected by the SVP.

SIM report specifications are shown below.

- (1) Time in SIM Log is basically “at the time of generating the phenomenon concerned”.
- (2) When satisfying the following conditions, SIM reports to the host.
 - SIM which is defined as “Yes” in the “Host Report” column in Table 2.1 and 2.2
 - SVP is in “View Mode”, and not in the “Complete” status.
 - The condition is basically that one hour elapses after device IMPL and 16K I/O is received after IMPL, but there is a SIM-RC which exceptionally reports regardless of IMPL time and the number of I/O (the target SIM-RC is noted in Table 2.1 and 2.2).
- (3) The access opportunities to perform the host report are as shown below:
 - Device SIM (byte28 = x ‘FE’) reports as statistic information basically at the time of accessing the device of the RAID Group concerned.
 - SIM other than the device SIM reports even if it accesses any device of the subsystem.
 - However, there is the one such as “DKC system (common) SIM” in the device SIM, and it performs the host report even if it accesses any device of the subsystem (the target SIM-SC is noted in Table 2.1 and 2.2).
- (4) You can refer to SIM LOG in the Information window of SVP from immediately after SIM is created. Timing of the automatic report is performed at this time.
- (5) When the automatic report is completed, a SIM to be automatically completed exists. (The target SIM-RC is noted in Table 2.1 and 2.2.)
- (6) If it does not become Complete status even after passing eight hours from the first host report, a re-host report (repeat host report) is performed. The re-host report is up to three times in total.

2.1 SIM Reference Codes Detected by the Processor

SIM Reference Codes Detected by the Processor (1/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
LCP/FCP/ HTP error	LCM Hardware error	21	3Y	XX	F1	Moderate	Yes	XX: CHA PCB# (*3) XX: LCP#1 Y: LCP#2 (*3)
	ADP permanent error	21	70	XX	F1	Moderate	Yes	XX: CHA PCB# (*1)
	ADP temporary error	21	71	XX	F1	Service	No	XX: CHA PCB# (*35) PORT# in PCB
	ADP blocking	21	72	XX	F1	Moderate	Yes	XX: CHA PCB# (*35) PORT# in PCB
	AL_PA value conflict	21	90	XX	F1	Service	No	XX: CHA PCB# (*35) PORT# in PCB
	Link failure 1	21	93	XX	F1	Serious	Yes	XX: CHA PCB# (*35,*48) PORT# in PCB
	Link failure 2	21	94	XX	F1	Serious	Yes	XX: CHA PCB# (*35,*47) PORT# in PCB
	LCP/FCP/HTP hard error	21	A0	XX	F1	Moderate	Yes	XX: CHA PCB# (*40) HTP PATH#
	LCP/FCP/HTP path temporary error	21	A1	XX	F1	Service	No	XX: CHA PCB# (*40) HTP PATH#
	LCP/FCP/HTP path blocking	21	A2	XX	F1	Moderate	Yes	XX: CHA PCB# (*40) HTP PATH#
	LCP/FCP/HTP blocking	21	A3	XX	F1	Moderate	Yes	XX: CHA PCB# (*35) PORT# in PCB
	Optical signal output failure	21	A6	XX	F1	Moderate	No	XX: CHA PCB# (*35) LCP#
	LED status change failure	21	A7	XX	F1	Moderate	No	XX: CHA PCB# (*35) LCP#
	SFP wrong type	21	A8	XX	F1	Moderate	No	XX: CHA PCB# (*35) PORT# in PCB
	IP address conflict detection	21	A9	XX	F1	Service	No	XX: CHA PCB# (*35) LCP#
	SFP TxFault	21	AA	XX	F1	Moderate	No	XX: CHA PCB# (*35) PORT# in PCB
CHA Processor error	CHK1A threshold over	30	70	XX	F1	Service	No	XX: CHA PCB# (*1) MP# in PCB
	CHK1B threshold over	30	71	XX	F1	Service	No	XX: CHA PCB# (*1) MP# in PCB
	CHK3 threshold over	30	72	XX	F1	Service	No	XX: CHA PCB# (*1) MP# in PCB
	Processor blocking	30	73	XX	F1	Moderate	Yes	XX: CHA PCB# (*1) MP# in PCB
	FM threshold over	30	74	XX	F1	Service	No	XX: CHA PCB# (*1) MP# in PCB
	FM error	30	75	XX	F1	Moderate	Yes	XX: CHA PCB# (*1) MP# in PCB
	Incorrect SUM value of FM	30	76	XX	F1	(*27)	No	XX: CHA PCB# (*1) MP# in PCB

SIM Reference Codes Detected by the Processor (2/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
CHA Processor error	Processor Memory Temporary Error (ESCON-1 (*54))	30	78	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (FICON-1 (*54))	30	79	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (OPEN Fibre-1 (*54))	30	7A	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (ESCON-2 (*55))	30	88	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (FICON-2 (*55))	30	89	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (OPEN Fibre-2 (*55))	30	8A	XX	F1	Service (*a)	No	XX: CHA PCB# MP# in PCB (*1)
	P/S OFF impossible	38	8F	00	F1	Moderate	No	
	P/S OFF impossible (Device reserved)	38	9F	00	F1	Moderate	No	
	P/S OFF warning (SM backup time not assured)	38	C0	00	F1	Moderate	No	

(*a) This SIM is automatically completed after automatic report completion.

SIM Reference Codes Detected by the Processor (3/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
CHA Processor error	Undefined Package is mounted	39	90	XX	F1	Moderate	No	XX: CHA PCB# MP# in PCB (*1,*5)
	V-R or serial number is inconsistent	39	91	XX	F1	Moderate	No	XX: CHA PCB# MP# in PCB (*1)
	Replace failed	39	93	XX	F1	Moderate	No	XX: CHA PCB# MP# in PCB (*1)
	CHF PCB exchange	39	99	XX	F1	Service	No	XX: CHA PCB# MP# in PCB (*1)
	Warning of SM DISABLE (MPA detected) (*37,*61)	39	9A	XX	F1	Moderate	No	XX: CHA PCB# SM PCB# (*1)
	SMA slave error	39	9B	XX	F1	Moderate	No	XX: CHA PCB# MP# in PCB (*1)
	MPA slave error	39	9C	XX	F1	Moderate	No	XX: CHA PCB# MP# in PCB (*1)
	Injustice DC voltage control (*38,*61)	39	9D	XX	F1	Moderate	No	XX: CHA PCB# (*1)
	Injustice CE MODE (*38,*61)	39	9E	XX	F1	Moderate	No	XX: CHA PCB# (*1)
	Injustice CEDT0 (*38)	39	9F	XX	F1	Moderate	No	XX: CHA PCB# (*1)
	CHA patrol check error	39	C0	XX	F1	Service	No	XX: CHA PCB# MP# in PCB (*1)
	CHA Memory Correctable error	39	C1	XX	F1	Service	No	XX: CHA PCB# MP# in PCB
	Backup/restore SM Information failed	61	00	XX	F1	Moderate	No	XX =00: Backup failed (LAN error) 01: Backup failed (Micro factor) 02: Recovery failed
	Backup/Restore SYSTEMDISK Failed	65	00	XX	F1	Moderate	No	XX =00: Area save failed 01: Backup failed 02: Recovery failed

SIM Reference Codes Detected by the Processor (4/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
DKA Processor error	CHK1A threshold over	31	70	XX	F1	Service	No	XX: DKA PCB# MP# in PCB (*1)
	CHK1B threshold over	31	71	XX	F1	Service	No	XX: DKA PCB# MP# in PCB (*1)
	CHK3 threshold over	31	72	XX	F1	Service	No	XX: DKA PCB# MP# in PCB (*1)
	Processor blocking	31	73	XX	F1	Moderate	Yes	XX: DKA PCB# MP# in PCB (*1)
	FM error	31	75	XX	F1	Moderate	Yes	XX: DKA PCB# MP# in PCB (*1)
	Incorrect SUM value of FM	31	76	XX	F1	(*27)	No	XX: DKA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (DKF-1 (*54))	31	78	XX	F1	Service (*a)	No	XX: DKA PCB# MP# in PCB (*1)
	Processor Memory Temporary Error (DKF-2 (*55))	31	88	XX	F1	Service (*a)	No	XX: DKA PCB# MP# in PCB (*1)
	P/S OFF impossible	3C	8F	00	F1	Moderate	No	
	P/S OFF impossible (Device reserved)	3C	9F	00	F1	Moderate	No	
	P/S OFF warning (SM backup time not assured)	3C	C0	00	F1	Moderate	No	
	Undefined Package is mounted	3D	90	XX	F1	Moderate	No	XX: DKA PCB# MP# in PCB (*1,*5)
	V-R or serial number is inconsistent	3D	91	XX	F1	Moderate	No	XX: DKA PCB# MP# in PCB (*1)
	Replace failed	3D	93	XX	F1	Moderate	No	XX: DKA PCB# MP# in PCB (*1)
	Warning of SM DISABLE (MPA detected) (*37,*61)	3D	9A	XX	F1	Moderate	No	XX: DKA PCB# SM PCB# (*1)
	SMA slave error	3D	9B	XX	F1	Moderate	No	XX: DKA PCB# MP# in PCB (*1)
	MPA slave error	3D	9C	XX	F1	Moderate	No	XX: DKA PCB# MP# in PCB (*1)
	Injustice DC voltage control (*38,*61)	3D	9D	XX	F1	Moderate	No	XX: DKA PCB# (*1)
	Injustice CE MODE (*38,*61)	3D	9E	XX	F1	Moderate	No	XX: DKA PCB# (*1)
	Injustice CEDT0 (*38)	3D	9F	XX	F1	Moderate	No	XX: DKA PCB# (*1)

(*a) This SIM is automatically completed after automatic report completion.

SIM Reference Codes Detected by the Processor (5/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
DKA Processor error	FSW LED BUS test (*61)	3D	AY	XX	FE	Moderate	No	XX: DKA PCB# (*36) FCA# in PCB Y: FSW PCB#
	Tachyon error (*61)	3D	B0	XX	FE	Service	No	XX: DKA PCB# (*1) MP# in PCB
	Backend Fibre Interrupt failure (*61)	3D	B1	XX	FE	Service	No	XX: DKA PCB# (*1) MP# in PCB
	DKA patrol check error	3D	C0	XX	F1	Service	No	XX: DKA PCB# (*1) MP# in PCB
	DKA Memory Correctable error	3D	C1	XX	F1	Service	No	XX: DKA PCB# MP# in PCB
	Backup/restore SM Information failed	61	00	XX	F1	Moderate	No	XX =00: Backup failed (Hardware factor) 01: Backup failed (Micro factor) 02: Recovery failed
	Backup/Restore SYSTEMDISK Failed	65	00	XX	F1	Moderate	No	XX =00: Area save failed 01: Backup failed 02: Recovery failed
	LDEV Blockade (Effect of Encryption key lost)	66	00	XX	F1	Moderate	No	XX =00: No Encryption key

SIM Reference Codes Detected by the Processor (6/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
SHSN error	Logical path blockade (CHA Processor)	32	8Y	XX	F1	Moderate	No	XX: CHA PCB# (*1) MP# in PCB Y: PATH# (*31,*44) 0: A0 PATH 4: C0 PATH 1: A1 PATH 5: C1 PATH 2: B0 PATH 6: D0 PATH 3: B1 PATH 7: D1 PATH
	Logical path blockade (DKA Processor)	33	8Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: PATH# (*31,*44) 0: A0 PATH 4: C0 PATH 1: A1 PATH 5: C1 PATH 2: B0 PATH 6: D0 PATH 3: B1 PATH 7: D1 PATH
CHSN error (*61)	Logical path blockade (CHA-DMA0/CL1-CSW)	32	0Y	XX	F1	Moderate	No	XX: CHA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (CHA-DMA0/CL2-CSW)	32	1Y	XX	F1	Moderate	No	XX: CHA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (CHA-DMA1/CL1-CSW)	32	2Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (CHA-DMA1/CL2-CSW)	32	3Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (CHA/PMA/CL1-CSW)	32	4Y	XX	F1	Moderate	No	XX: CHA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (CHA/PMA/CL2-CSW)	32	5Y	XX	F1	Moderate	No	XX: CHA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/DRR/CL1-CSW)	33	0Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/DRR/CL2-CSW)	33	1Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/FCA0/CL1-CSW)	33	2Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/FCA0/CL2-CSW)	33	3Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/FCA1/CL1-CSW)	33	4Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)
	Logical path blockade (DKA/FCA1/CL2-CSW)	33	5Y	XX	F1	Moderate	No	XX: DKA PCB# (*1) MP# in PCB Y: C path (*29,*45)

SIM Reference Codes Detected by the Processor (7/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
CHA CHK2 (processor)	RCHA temporary error (*61)	3F	84	XX	F1	Service	No	XX: CHA PCB# (*1)
	RCHA blocking (*61)	3F	85	XX	F1	Serious	Yes	XX: CHA PCB# (*1)
DKA CHK2 (processor)	Pinned slot	CF	4X	YY	F1	Moderate	No	X: CU# (*34) YY: LDEV#
	DRR temporary error (*61)	CF	80	XX	F1	Service	No	XX: DKA PCB# (*1) MP# in PCB
	FCA temporary error (*61)	CF	81	XX	F1	Service	No	XX: DKA PCB# (*4) Port#
	DRR blocking (*61)	CF	82	XX	F1	Moderate	Yes	XX: DKA PCB# (*1) MP# in PCB
	FCA blocking (0-3) (*61)	CF	83	XX	F1	Moderate	Yes	XX: DKA PCB# (*4) Port#
	Fibre port blocking (Effect of PATH INLINE failed) (*61)	CF	84	XX	F1	Moderate	No	XX: DKA PCB# (*4) Port#
Cache data error	Pinned slot	FF	4X	YY	F2	Moderate	No	X: CU# YY: LDEV#
Cache error	Cache Module Blockade Processing end	FF	C2	YX	F2	Service	Yes	X: PCB# (*2) Side A: Even, Side B: Odd Y: Module group# (*10)
	Cache Package Blockade Processing End	FF	C3	0X	F2	Service	Yes	X: PCB# (*2) Side A: Even, Side B: Odd
	CM/CMA patrol check error	FF	CC	0X	F2	Service	No	X: PCB# (*2) Side A: Even, Side B: Odd
	Area is volatilized	FF	CD	0X	F2	Service	No	X: 0 = Side A, 1 = Side B (*2) (*46)
	Package is volatilized	FF	CE	0X	F2	Service	No	X: PCB# (*2) Side A: Even, Side B: Odd
	Module group is volatilized	FF	CF	YX	F2	Service	No	X: PCB# (*2) Side A: Even, Side B: Odd Y: Module group# (*10)
	Correctable error	FF	F0	YX	F2	Service	No	X: PCB# (*2) Side A: Even, Side B: Odd Y: Module group# (*10)
	Cache temporary error	FF	F1	YX	F2	Service	Yes	X: PCB# (*2) Side A: Even, Side B: Odd Y: Module group# (*10)
	Module group blocking	FF	F2	YX	F2	Moderate	Yes	X: PCB# (*2) Side A: Even, Side B: Odd Y: Module group# (*10)
	Package blocking (*61)	FF	F3	0X	F2	Moderate	Yes	X: PCB# (*2) Side A: Even, Side B: Odd
	Area blocking (*61)	FF	F4	0X	F2	Serious	Yes	X: 0 = Side A, 1 = Side B (*2)
	Both area failed (*61)	FF	F5	0X	F2	Moderate	No	X: PCB# (*2) Side A: Even, Side B: Odd

SIM Reference Codes Detected by the Processor (8/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Cache error	Injustice DC voltage control (*38,*61)	FF	F6	0X	F2	Moderate	No	X: PCB# (*2) Side A: Even, Side B: Odd
	Injustice CE MODE (*38,*61)	FF	F7	0X	F2	Moderate	No	X: PCB# (*2) Side A: Even, Side B: Odd
	CMA Memory Correctable error	FF	F8	0X	F2	Service	No	X: PCB# (*2) Side A: Even, Side B: Odd
	Replace failed (*53)	FF	F9	0X	F2	Serious	No	X: 0 = Side A, 1 = Side B (*2)
	Module group error in On- demand area	FF	FD	YX	F2	Moderate	No	X: PCB# (*2) Y: Module group#
Shared memory error	SMA patrol check error	FF	DC	0X	F1	Service	No	X: PCB# (*2)
	Loss of duplicated information	FF	DE	XX	F1	Service	No	XX: Lost information type (*25)
	One side Area is volatilized	FF	DF	0X	F1	Service	No	X: 0 = Side A, 1 = Side B (*2)
	Correctable error	FF	E0	YX	F1	Service	No	X: PCB# (*2) Y: Module# (*2, *10)
	Package blocking (*61)	FF	E1	0X	F1	Moderate	No	X: PCB# (*2)
	Area blocking (*61)	FF	E2	0X	F1	Serious	Yes	X: 0 = Side A, 1 = Side B (*2, *10)
	Real memory size inconsistent between clusters	FF	E3	0X	F1	Serious	No	X: 0 = Side A, 1 = Side B (*2, *8)
	Replace failed (*20)	FF	E4	0X	F1	Serious	No	X: PCB# (*2)
	Both side invalid (*61)	FF	E5	00	F1	Acute	No	
	Shared memory is volatilized.	FF	E7	00	F1	Serious	No	
	Definition/Installation mismatch	FF	E8	00	F1	Acute	No	See TRBL05-790 .
	“DKCMAIN” micro lost	FF	E9	00	F1	Serious	No	(*30)
	HPAV micro lost	FF	E9	01	F1	Serious	Yes	
	Recovery of area blocked temporarily was completed	FF	EA	0X	F1	Service	Yes	X: 0 = Side A, 1 = Side B (*2)
	CHK3 threshold over	FF	EC	0X	F1	Service	No	X: PCB# (*2)
	Area temporary blocking (*19)	FF	EE	0X	F1	Service	Yes	X: 0 = Side A, 1 = Side B (*2)
	Rebooted without volatilization after an instantaneous down	FF	EF	00	F1	Service	No	
	Injustice DC voltage control (*61)	FF	D6	0X	F1	Service	No	X: PCB# (*2)
	Injustice CE MODE (*61)	FF	D7	0X	F1	Service	No	X: PCB# (*2)
	Injustice CEDT0	FF	D8	0X	F1	Service	No	X: PCB# (*2)
	Module error in On-demand area	FF	ED	YX	F1	Service	No	X: PCB# (*2) Y: Module#

SIM Reference Codes Detected by the Processor (9/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Drive error (normal R/W)	Drive port temporary error (Drive path: Boundary 0) (*61)	DF	6X	XX	FE	Service (*32)	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive port temporary error (Drive path: Boundary 1) (*61)	DF	7X	XX	FE	Service (*32)	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive temporary error	EF	AX	XX	FE	Service (*32)	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive media error	43	4X	XX	FF	Service (*32)	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive port blockade (Drive path: Boundary 0) (*61)	DF	8X	XX	FE	Moderate (*32)	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive port blockade (Drive path: Boundary 1) (*61)	DF	9X	XX	FE	Moderate (*32)	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	LDEV blockade (Drive path: Boundary 0/ Effect of SCSI blockade) (*15)	DF	AX	XX	FE	Serious	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	LDEV blockade (Drive path: Boundary 1/ Effect of SCSI blockade) (*15)	DF	BX	XX	FE	Serious	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive blockade (drive) (with redundancy)	EF	0X	XX	FE	Serious	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive blockade (drive) (without redundancy)	EF	1X	XX	FE	Serious	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive blockade (Effect of Dynamic sparing normal end)	EF	2X	XX	FE	Service	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	LDEV blockade (Effect of drive blockade) (*15)	EF	9X	XX	FE	Serious	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive blockade by the incorrect set up of a DKU type	EF	FF	0X	FE	Serious	No	X: DKU position (DKU-R:0, DKU-L:1)
	Drive blockade (media) (with redundancy)	43	BX	XX	FF	Serious	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive blockade (media) (without redundancy)	43	CX	XX	FF	Serious	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)

(*b) This device SIM performs the host report at the opportunities to access the DKC system (common) SIM and the optional device.

(*c) When the drive is 3880 emulation mode, the SIM is not reported to host.

SIM Reference Codes Detected by the Processor (10/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Drive error (normal R/W)	Correction copy start (*7)	45	1X	XX	FE	Service	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Correction copy normal end (*7)	45	2X	XX	FE	Service	Yes (*a) (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Correction copy abnormal end (*7)	45	3X	XX	FE	Serious	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Correction copy discontinued (*7)	45	4X	XX	FE	Service	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Correction copy warning end* (With blockade LDEV or some error) (*7)	45	5X	XX	FE	Service	Yes (*b) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Dynamic sparing start (*7) (Drive copy)	46	1X	XX	FE	Service	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Dynamic sparing normal end (*7) (Drive copy)	46	2X	XX	FE	Service	Yes (*a) (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Dynamic sparing abnormal end (Drive copy) (*7)	46	3X	XX	FE	Moderate	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Dynamic sparing discontinued (*7)	46	4X	XX	FE	Service	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Dynamic sparing warning end* (With blockade LDEV or some error) (Drive copy) (*7)	46	5X	XX	FE	Service	Yes (*c)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b) (Source side drive)
	Pinned slot	EF	4X	YY	FE	Moderate	No	X: CU# YY: LDEV#
Drive error (ORM)	Drive temporary error	50	1X	XX	FE	Service	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	Drive media error	50	2X	XX	FF	Service	No	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)

(*a) This SIM is automatically completed after automatic report completion.

(*b) This device SIM performs the host report at the opportunities to access the DKC system (common) SIM and the optional device.

(*c) When the drive is 3880 emulation mode, the SIM is not reported to host.

SIM Reference Codes Detected by the Processor (11/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Drive micro- program exchange (OEM drive)	OEM drive Microprogram exchange start	4A	10	00	FE	Service	No (*a)	
	OEM drive Microprogram exchange normal end	4A	20	00	FE	Service	No (*a)	
	OEM drive Microprogram exchange abnormal end	4A	30	00	FE	Service	No	
	OEM drive Microprogram exchange discontinued	4A	40	00	FE	Service	No (*a)	
PDEV Erase	PDEV Erase Start	4C	1X	XX	FE	Service	No (*a)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	PDEV Erase Normal End	4C	2X	XX	FE	Service	No (*a)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)
	PDEV Erase Abnormal End	4C	3X	XX	FE	Service	No (*a)	XXX: Drive number (*43) (CDEV#:5b+RDEV#:7b)

(*a) This SIM is automatically completed after automatic report completion.

SIM Reference Codes Detected by the Processor (12/12)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Cache Condition	Cache Write Pending ratio is over 65%	49	10	00	F1	Service	No	(*52)
Format	Format complete	41	00	XX	F1	Service	No (*a) (*a')	XX = (*57) 00: Normal end 01: Abnormal end 02: Partial abnormal end
	Quick Format finish	41	01	00	F1	Service	No (*a)	
CSW error	Injustice DC voltage control (*38)	FF	20	0X	F1	Moderate	No	X: CSW PCB# (*2)
	Injustice CE MODE (*38)	FF	21	0X	F1	Moderate	No	X: CSW PCB# (*2)
	CARB patrol check error	FF	22	0X	F1	Service	No	X: CSW PCB# (*2)
	CARB Memory Correctable error	FF	23	0X	F1	Service	No	X: CSW PCB# (*2)
SVP interface error (CHA side)	Ethernet error for SVP	14	00	XX	F1	Moderate	Yes	XX: CHA PCB# (*1)
	SIM transfer failure to SVP	14	01	XX	F1	Serious	Yes	XX: CHA PCB# (*1)
SVP interface error (DKA side)	Ethernet error for SVP	15	00	XX	F1	Moderate	Yes	XX: DKA PCB# (*1)
	SIM transfer failure to SVP	15	01	XX	F1	Serious	Yes	XX: DKA PCB# (*1)
System Disk	Audit Log lost	18	00	00	F1	Moderate	Yes	
	Audit Log not access	18	01	00	F1	Moderate	Yes	
Power error	HDU power off (*61)	AC	50	XY	F1	Moderate	Yes	X: DKU number (*12) Y: HDU number (*12)
	HDU power recovered	AC	51	XY	F1	Service	No	X: DKU number (*12) Y: HDU number (*12)
	DKC was set to power error mode	AC	60	00	F1	Moderate	No	
	DKC was released from power error mode	AC	61	00	F1	Service	No	
	When DKC was set to power error mode, Urgent Destaging start succeeded.	AC	62	00	F1	Service	No	
	When DKC was set to power error mode, Urgent Destaging start failed.	AC	63	00	F1	Moderate	No	
Server error	DB Validation error	AC	90	00	F1	Serious	No	(*41)

(*a) This SIM is automatically completed after automatic report completion.

(*a') After SATA HDD/FLASH DRIVE/Encrypted PG LDEV Formatting is executed, this SIM is reported.

SIM Reference Codes Detected by the Processor for HRC/HAM (1/2)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume status error	HRC/HAM started the initial copy or out of sync for this volume.	D0	0X	YY	FE	Service	Yes (*17) (*a)	X: CU# YY: LDEV#
	HRC/HAM completed the initial copy for this volume.	D0	1X	YY	FE	Service	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was deleted. (Operation from an SVP/remote console or a host processor)	D0	2X	YY	FE	Service	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	MCU changed volume pair status. (Operation from an SVP/remote console or a host processor)	D0	3X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)
	Status of the R-VOL is changed.	D1	ZX	YY	FE	Service	Yes (*17) (*a)	X: CU# YY: LDEV# (*34) Z: (*16)
	RCU changed status of R-VOL to suspend. (Operation from an SVP/remote console or a host processor.)	D2	0X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)
	Status of the R-VOL was changed from suspend to simplex. (Operation from an SVP/remote console or a host processor.)	D2	1X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)
	Status of R-VOL was changed from duplex to simplex. (Operation from an SVP/remote console or a host processor.)	D2	2X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)
	Status of the R-VOL was changed from pending duplex to simplex. (Operation from an SVP/remote console or a host processor.)	D2	3X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

SIM Reference Codes Detected by the Processor for HRC/HAM (2/2)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume status error	Start of differential copy	D3	0X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was suspended (Due to an unrecoverable failure on the remote copy connections.)	D4	0X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was suspended (Due to an unrecoverable failure on the M-VOL or the remote copy connections)	D4	1X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was suspended (Due to an unrecoverable failure on the R-VOL)	D4	2X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC for this volume was suspended (Caused by DFW to the R-VOL was prohibited)	D4	3X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was suspended (Due to an internal error condition detected by the RCU)	D4	4X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	HRC/HAM for this volume was suspended (Caused by Delete pair operation was issued to the R-VOL)	D4	5X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The R-VOL has suspended. (Due to an unrecoverable failure on the remote copy connections)	D4	6X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	Erase operation for this volume was not completed. (Due to error conditions)	D4	8X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	MCU detected a Moderate Level SIM for RCU.	D4	DX	YY	FE	Moderate	Yes (*18) (*a)	X: CU# YY: LDEV# (*34)
	MCU detected an Acute or Serious Level SIM for RCU.	D4	EX	YY	FE	Serious	Yes (*18) (*a)	X: CU# YY: LDEV# (*34)
	Status of the M-VOL was not consistent with the R-VOL.	D4	FX	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
Command device operation	Command device operation execution of command device in state of ONLINE	D5	7X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

SIM Reference Codes Detected by the Processor for HRC/HORC (Asynchronous)

(1/2)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume status error	HRC started the initial copy or out of sync for this volume.	D5	0X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	HRC completed the initial copy for this volume.	D5	1X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	HRC for this volume was accepted delete pair operation. (Operation from an SVP/remote console or a host processor)	D5	2X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	HRC for this volume was accepted suspend pair operation. (Operation from an SVP/remote console or a host processor)	D5	3X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	Delete pair operation for this HRC volume has completed.	D5	4X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	Suspend pair operation for this HRC volume has completed.	D5	5X	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# (*34)
	The R-VOL status has changed as requested by MCU.	D6	ZX	YY	FE	Service	Yes (*17)	X: CU# YY: LDEV# Z: (*16)
	The R-VOL has accepted/completed state change as requested by operation. (Operation from an SVP/remote console or a host processor.)	D7	ZX	YY	FE	Service	No	X: CU# YY: LDEV# Z: (*34) (*26)
	The M-VOL has suspended. (Due to an unrecoverable failure on the remote copy connections.)	DB	0X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The M-VOL has suspended. (Due to an unrecoverable failure on the M-VOL or the remote copy connections)	DB	1X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The M-VOL has suspended. (Due to an unrecoverable failure on the R-VOL)	DB	2X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The M-VOL has suspended. (Caused by DFW to the R-VOL was prohibited)	DB	3X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The M-VOL has suspended. (Caused by Suspend pair operation was issued to the R-VOL)	DB	4X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

SIM Reference Codes Detected by the Processor for HRC/HORC (Asynchronous) (2/2)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume status error	The M-VOL has suspended. (Caused by Delete pair operation was issued to the R-VOL)	DB	5X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The R-VOL has suspended. (Due to an unrecoverable failure on the remote copy connections)	DB	6X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The R-VOL has suspended. (Due to an unrecoverable failure on the R-VOL)	DB	7X	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)
	The R-VOL has suspended. (Due to an MCU power-off event)	DB	8X	YY	FE	Service	No	X: CU# YY: LDEV# (*34)
	MCU detected a Service Level SIM for RCU.	DB	CX	YY	FE	Service	Yes	X: CU# YY: LDEV# (*34)
	MCU detected a Moderate Level SIM for RCU.	DB	DX	YY	FE	Moderate	Yes	X: CU# YY: LDEV# (*34)
	MCU detected an Acute or Serious Level SIM for RCU.	DB	EX	YY	FE	Serious	Yes	X: CU# YY: LDEV# (*34)
	Status of the M-VOL was not consistent with the R-VOL.	DB	FX	YY	FE	Serious	Yes (*17) (*a)	X: CU# YY: LDEV# (*34)

Notice : SIM which REF.CODE is DB7XXX may be reported in the following case.

- When the Suspend Pair operation with the Drain option is accepted by the MCU/RCU under the host I/O.
- When the Delete Pair operation with the Group option is accepted by the RCU under the host I/O.

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

SIM Reference Codes Detected by the Processor for HRC/HORC/UR/HAM

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
LCP/FCP error (Remote Control Port)	Logical path(s) on the remote copy connections was logically blocked (Due to an error conditions)	21	80	XX	F1	Moderate	Yes (*51) (*a)	XX: CHA PCB# PORT# in PCB (*35)
	The logical path has been recovered from blocked condition on the remote copy conditions.	21	81	XX	F1	Service	Yes (*51) (*a)	XX: CHA PCB# PORT# in PCB (*35)
	MCU has received the notification of communication line error detection from extender.	21	82	XX	F1	Moderate	Yes (*51) (*a)	XX: CHA PCB# PORT# in PCB (*35)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

SIM Reference Codes Detected by the Processor for HMRCF/HOMRCF/FlashCopy (R)/FlashCopy (R) version 2/HHSM/HXRC/HRCA/COW (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
HMRCF error/ HOMRCF error/ FlashCopy (R) error/ FlashCopy (R) version 2 error	HMRCF/HOMRCF Copy abnormal end (*59)	47	DX	YY	FE	Moderate	Yes (*60)	X: CU# (*34) YY: T-Vol#
	FlashCopy (R) Option abnormal end	4B	0X	YY	FE	Moderate	Yes	X: CU# (*34) YY: T-Vol#
	All FlashCopy (R) Option abnormal end by SM volatile	47	E6	00	F1	Moderate	Yes	
	FlashCopy (R) version2 Option abnormal end	4B	2X	YY	FE	Moderate	Yes	X: CU# (*34) YY: T-Vol#
	All FlashCopy (R) version2 Option abnormal end by SM volatile	47	E5	00	F1	Moderate	Yes	
	Forcible suspend by SM volatile (HMRCF/HOMRCF) (*59)	47	E7	00	FE	Moderate	Yes	
	System Option MODE80 and HMRCF/HOMRCF settings are inconsistent.	47	E0	00	FE	Moderate	No	
HHSM error	HHSM Volume Migration Abnormal End	47	FX	YY	FE	Moderate	No	X: CU# (*34) YY: S-Vol#
HXRC/ HRCA error	Sidefile 'sleep wait' threshold over	49	0X	YY	FE	Service	Yes	X: CU# (*34) YY: LDEV# SVP MODE 118 ON: Generate SIM
Copy-on- Write	Forcible suspend by SM volatile	47	EC	00	F1	Moderate	Yes	
Snapshot error	Copy-on-Write Snapshot Option abnormal end	4B	3X	YY	FE	Moderate	Yes	X: CU# (*34) YY: T-Vol#
Pair Failure SIM Reduce	HMRCF/HOMRCF (*59)	7F	F1	02	F1	Service	No	
	COW	7F	F1	04	F1	Service	No	
	FlashCopy (R) version2	7F	F1	05	F1	Service	No	
	Volume Migration	7F	F1	06	F1	Service	No	
	FlashCopy (R)	7F	F1	07	F1	Service	No	

SIM Reference Codes Detected by the Processor for Copy-on-Write Snapshot Pool (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Corresponding to complete from WebCon	Remarks
		22	23	13					
Copy-on-Write Snapshot Pool error	Pool utilization threshold excess	60	1X	XX	F1	Moderate	Yes	Yes	XXX: Pool # Due to expectation of user's maintenance operation • No LED light on • No service report
	Pool blocking	60	2X	XX	F1	Moderate	Yes	Yes	XXX: 00~3FF: Pool # XXX: FFE: Pools blocking by SM volatile
	SM Full	60	2F	FF	F1	Moderate	Yes	No	

SIM Reference Code Detected by the Processor for Dynamic Provisioning (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Corresponding to complete from WebCon	Remarks
		22	23	13					
Dynamic Provisioning Pool error	The DP POOL threshold 1 was exceeded	62	0X	XX	F1	Moderate	Yes	Yes	XXX: Pool# Due to expectation of user's maintenance operation • No LED light on • No service report
	The DP POOL threshold 2 was exceeded.	62	1X	XX	F1	Moderate	Yes	Yes	XXX: Pool# Due to expectation of user's maintenance operation • No LED light on • No service report
	The DP POOL FULL	62	2X	XX	F1	Moderate	Yes	Yes	XXX: Pool# Due to expectation of user's maintenance operation • No LED light on • No service report
	The DP POOL error is detected.	62	3X	XX	F1	Moderate	Yes	No	XXX: Pool# XXX: FFE: DP Pools error by SM volatile
	SM Full	62	40	00	F1	Moderate	Yes	No	
	DP pool threshold continues to be exceeded.	62	50	00	F1	Moderate	Yes	Yes	Due to expectation of user's maintenance operation • No LED light on • No service report
	The DP VOL threshold was exceeded.	63	0X	XX	F1	Moderate	Yes	Yes	XXX: Pool# Due to expectation of user's maintenance operation • No LED light on • No service report
	Pool administrative information failed	64	0X	XX	F1	Moderate	No	No	XXX: Pool# XXX: FFE: DP Pools error.

SIM Reference Codes Detected by the Processor for DCR (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
DCR Status	PreStaging abnormal end	48	21	XX	FE	Service	No	XX: Reason code (*11)

SIM Reference Codes Detected by the Processor for External Subsystem Connection (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
External Subsystem Connection	External Subsystem Connection Path Failure	21	D0	XX	F1	Moderate	Yes	XX: CHA PCB# (*35,*42) PORT# in PCB
	External Subsystem Connection Path recovery	21	D1	XX	F1	Service	No	XX: CHA PCB# (*35,*42) PORT# in PCB
	External Subsystem path response time out threshold over	21	D2	XX	F1	Service	Yes	XX: CHA PCB# (*35,*42) PORT# in PCB
	External Subsystem Device failure	EF	D0	00	FE	Serious	Yes	(*42)
External Subsystem Device failure	Abnormal end of Write processing in External subsystem	EF	5X	YY	FE	Moderate	No	X: CU# (*34) YY: LDEV#
	Abnormal end of Read processing in External subsystem	FF	5X	YY	FE	Moderate	No	X: CU# (*34) YY: LDEV#

SIM Reference Codes Detected by the Processor for FICON Data Migration (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
FICON Data Migration	Blocking the Data Migration path	21	D4	XX	F1	Moderate	No	XX: CHA PCB# (*35,*58) PORT# in PCB
	Data Migration Path Recovery	21	D5	XX	F1	Service	No	XX: CHA PCB# (*35,*58) PORT# in PCB
	Blocking the Data Migration source device	EF	D4	00	FE	Moderate	No	(*58)

List of Reference Codes of SIMs Detected by UR Processor (1/3)

Error		REF CODE			SIM	Level of error	Host report	Remarks
		22	23	13				
Pair volume failure	A volume to be used by the UR was defined	D8	0X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR began a copying	D8	1X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR completed a copying	D8	2X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR received a request for suspension	D8	3X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR completed a suspension transaction	D8	4X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR received a request for deletion	D8	5X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR completed the deletion	D8	6X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	The volume being used by the UR was defined (placed in the PSUS status immediately)	D8	7X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A Delta volume to be used by the UR was defined	D8	8X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A Delta volume to be used by the UR was redefine	D8	9X	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A change to an S-VOL was received from the MCU	D9	ZX	YY	FE	Service	Yes (*56) (*a)	X: CU# (*34) YY: LDEV# Z: (*49)
	A change to an S-VOL was received from the RCU	DA	ZX	YY	FE	Service	No	X: CU# (*34) YY: LDEV# Z: (*50)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

List of Reference Codes of SIMs Detected by UR Processor (2/3)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume failure	A volume being used by a P-VOL was suspended (Path recovery was impossible)	DC	0X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by a P-VOL was suspended (A failure on the MCU side was detected)	DC	1X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by a P-VOL was suspended (Suspension of an S-VOL failure was detected)	DC	2X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by a P-VOL was suspended (Suspension of an S-VOL was detected)	DC	4X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by a P-VOL was suspended (Deletion of an S-VOL pair was detected)	DC	5X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by an S-VOL was suspended (Path recovery was impossible)	DC	6X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by an S-VOL was suspended (A failure on the RCU side was detected)	DC	7X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	A volume being used by an S-VOL was suspended (P/S OFF on the MCU side was detected)	DC	8X	YY	FE	Service	No	X: CU# (*34) YY: LDEV#
	A Delta volume being used by a P-VOL was suspended	DC	9X	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#
	Pair suspend (Spread by error of another Affiliate)	DC	AX	YY	FE	Serious	Yes (*56) (*a)	X: CU# (*34) YY: LDEV#

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

List of Reference Codes of SIMs Detected by UR Processor (3/3)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Pair volume failure	The UR Read JNL was interrupted for one minute (A failure on the MCU side was detected)	DC	F0	AA	FE	Moderate	No	AA: JNLG#
	The UR Read JNL was interrupted for five minutes (A failure on the MCU side was detected)	DC	F1	AA	FE	Serious	No	AA: JNLG#
	The UR Read JNL was interrupted for one minute (A failure on the RCU side was detected)	DC	F2	AA	FE	Moderate	No	AA: JNLG#
	The UR Read JNL was interrupted for five minutes (A failure on the RCU side was detected)	DC	F3	AA	FE	Serious	No	AA: JNLG#
Journal volume failure	UR M-JNL Meta overflow warning	DC	E0	AA	FE	Moderate	No	AA: JNLG#
	UR M-JNL Data overflow warning	DC	E1	AA	FE	Moderate	No	AA: JNLG#
	UR R-JNL Meta overflow warning	DC	E2	AA	FE	Moderate	No	AA: JNLG#
	UR R-JNL Data overflow warning	DC	E3	AA	FE	Moderate	No	AA: JNLG#
	UR M-JNL Meta overflow warning in UR×UR multitarget configuration	DC	F4	AA	FE	Moderate	No	AA: JNLG# (*62)
	UR M-JNL Data overflow warning in UR×UR multitarget configuration	DC	F5	AA	FE	Moderate	No	AA: JNLG# (*62)

(*a) This SIM performs the host report even though it is less than one hour after IMPL or the number of I/O is less than 16,000 I/O.

List of Reference Codes of SIMs Detected by HAM Processor (1/1)

Error		REF CODE			SIM 28	Level of error	Host report	Remarks
		22	23	13				
Quorum Disk error	HAM VOL Blocked by Quorum Disk Information Error	DE	A0	XX	FE	Serious	No	XX: Quorum Disk ID
	Quorum Disk Blocked	DE	F0	XX	FE	Serious	No	XX: Quorum Disk ID

(*1) CHA PCB#: Content of high 5 Bit indicates the CHA PCB number.

DKA PCB#: Content of high 5 Bit indicates the DKA PCB number. See the figure below.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑
Content of high 5 Bit indicates the Information.

MP# in PCB: Content of low 2 Bit (x'0' to x'3') indicates the MP number in PCB.

See the figure below.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑
Content of low 2 Bit indicates the Information.

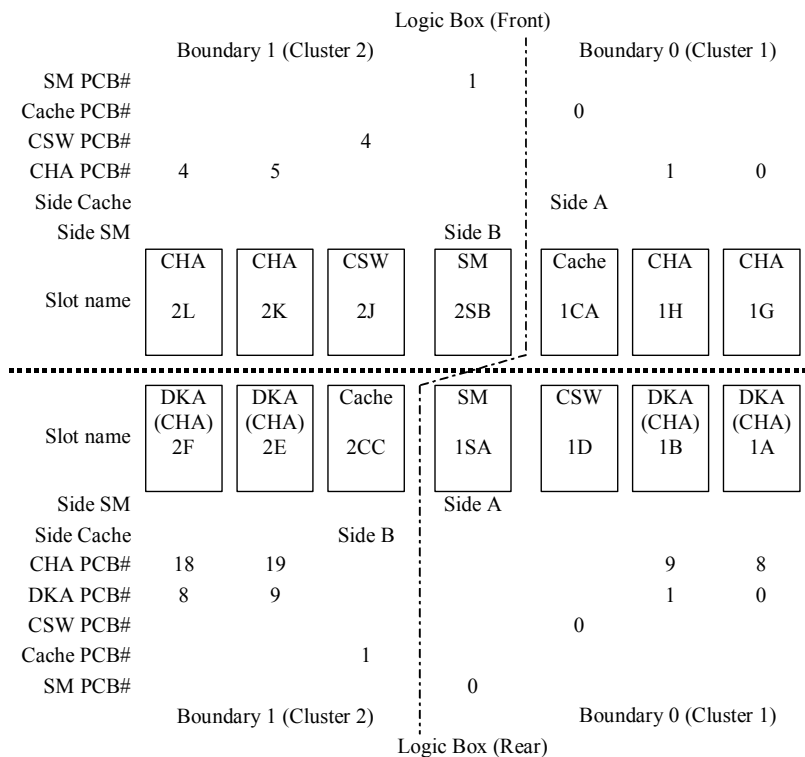
Code of CHA MP and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	CHA-1G MP0	x'01'	CHA-1G MP1	x'02'	CHA-1G MP2	x'03'	CHA-1G MP3
x'08'	CHA-1H MP0	x'09'	CHA-1H MP1	x'0A'	CHA-1H MP2	x'0B'	CHA-1H MP3
x'40'	CHA-1A MP0	x'41'	CHA-1A MP1	x'42'	CHA-1A MP2	x'43'	CHA-1A MP3
x'48'	CHA-1B MP0	x'49'	CHA-1B MP1	x'4A'	CHA-1B MP2	x'4B'	CHA-1B MP3
x'80'	CHA-2L MP0	x'81'	CHA-2L MP1	x'82'	CHA-2L MP2	x'83'	CHA-2L MP3
x'88'	CHA-2K MP0	x'89'	CHA-2K MP1	x'8A'	CHA-2K MP2	x'8B'	CHA-2K MP3
x'C0'	CHA-2F MP0	x'C1'	CHA-2F MP1	x'C2'	CHA-2F MP2	x'C3'	CHA-2F MP3
x'C8'	CHA-2E MP0	x'C9'	CHA-2E MP1	x'CA'	CHA-2E MP2	x'CB'	CHA-2E MP3

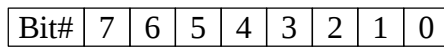
Code of DKA MP and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	DKA-1A MP0	x'01'	DKA-1A MP1	x'02'	DKA-1A MP2	x'03'	DKA-1A MP3
x'08'	DKA-1B MP0	x'09'	DKA-1B MP1	x'0A'	DKA-1B MP2	x'0B'	DKA-1B MP3
x'40'	DKA-2F MP0	x'41'	DKA-2F MP1	x'42'	DKA-2F MP2	x'43'	DKA-2F MP3
x'48'	DKA-2E MP0	x'49'	DKA-2E MP1	x'4A'	DKA-2E MP2	x'4B'	DKA-2E MP3

- (*2) Side A/B: Indicates the side of cache/shared memory. See the figure below.
 SM PCB#: Content of x'0' ~ x'3' indicates the SM PCB number. See the figure below.
 CSW PCB#: Content of x'0' ~ x'7' indicates the CSW PCB number. See the figure below.
 Cache PCB#: Content of x'0' ~ x'7' indicates the Cache PCB number. See the figure below.

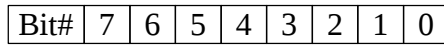


(*3) CHA PCB#: Content of high 5 Bit indicates the CHA PCB number. See the figure below.



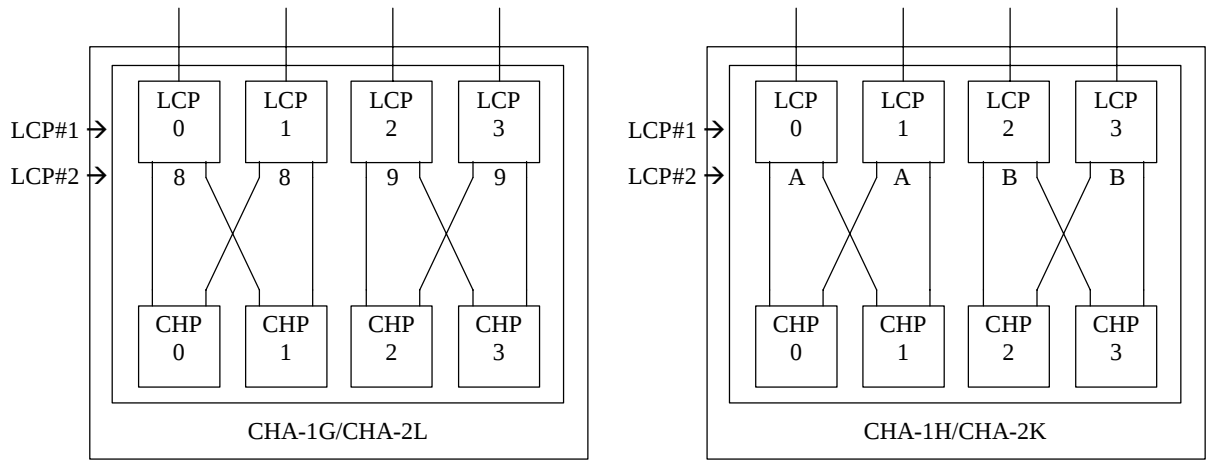
Content of high 5 Bit indicates the Information.

LCP#1: Content of low 2 bit (x'0' to x'3') indicates the LCP number. See the figure below.



Content of low 2 bit indicates the LCP#1.

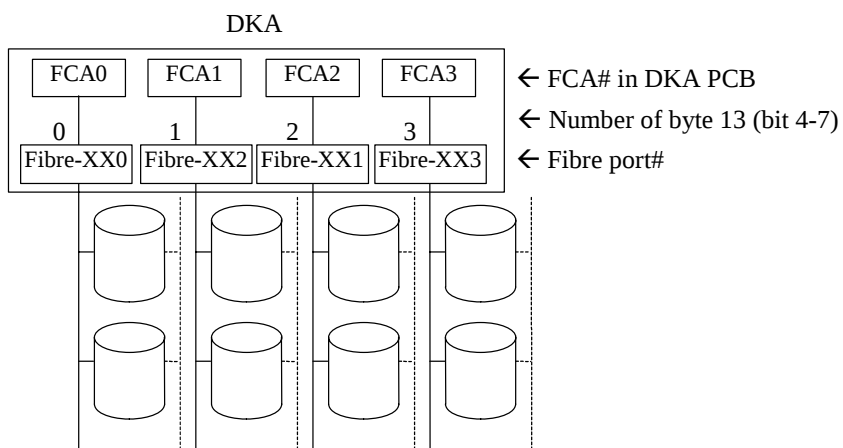
LCP#2: x'8' to x'B' indicates the LCP number. See the figure below.



Code of CHA LCP#1 and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	CHA-1G LCP0	x'01'	CHA-1G LCP1	x'02'	CHA-1G LCP2	x'03'	CHA-1G LCP3
x'08'	CHA-1H LCP0	x'09'	CHA-1H LCP1	x'0A'	CHA-1H LCP2	x'0B'	CHA-1H LCP3
x'40'	CHA-1A LCP0	x'41'	CHA-1A LCP1	x'42'	CHA-1A LCP2	x'43'	CHA-1A LCP3
x'48'	CHA-1B LCP0	x'49'	CHA-1B LCP1	x'4A'	CHA-1B LCP2	x'4B'	CHA-1B LCP3
x'80'	CHA-2L LCP0	x'81'	CHA-2L LCP1	x'82'	CHA-2L LCP2	x'83'	CHA-2L LCP3
x'88'	CHA-2K LCP0	x'89'	CHA-2K LCP1	x'8A'	CHA-2K LCP2	x'8B'	CHA-2K LCP3
x'C0'	CHA-2F LCP0	x'C1'	CHA-2F LCP1	x'C2'	CHA-2F LCP2	x'C3'	CHA-2F LCP3
x'C8'	CHA-2E LCP0	x'C9'	CHA-2E LCP1	x'CA'	CHA-2E LCP2	x'CB'	CHA-2E LCP3

(*4) Port #: x'0' to x'3' indicates the FIBRE port number. See the figure below.



Code of DKA PORT# and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	DKA-1A PORT0	x'01'	DKA-1A PORT1	x'02'	DKA-1A PORT2	x'03'	DKA-1A PORT3
x'08'	DKA-1B PORT0	x'09'	DKA-1B PORT1	x'0A'	DKA-1B PORT2	x'0B'	DKA-1B PORT3
x'40'	DKA-2F PORT0	x'41'	DKA-2F PORT1	x'42'	DKA-2F PORT2	x'43'	DKA-2F PORT3
x'48'	DKA-2E PORT0	x'49'	DKA-2E PORT1	x'4A'	DKA-2E PORT2	x'4B'	DKA-2E PORT3

- (*5) The package that is not defined in the configuration information exists.
If it is prepared for new installation, it is necessary to do the new installation procedure.
Otherwise it should be pulled out by executing P/S off.
- (*7) Isolate the error according to the procedure shown in [TRBL05-280](#).
- (*8) Recover the error according to the procedure shown in [TRBL05-430](#).
- (*10) Perform error isolation according to the procedure given in the two separate pages attached to [TRBL05-460](#).

Refer to [LOC02-60](#) and [LOC02-70](#), and check the DIMM replacement position.

Refer to the table below for the relationship of the Cache module group number, SM module number, and the DIMM slot.

Cache module group number

MG#	DIMM slot	
0	CM00A	CM10A
1	CM01A	CM11A
2	CM02A	CM12A
3	CM03A	CM13A
4	CM00B	CM10B
5	CM01B	CM11B
6	CM02B	CM12B
7	CM03B	CM13B

SM module number

Module number	DIMM slot
0	SM00
1	SM01
2	SM02
3	SM03
4	SM04
5	SM05
6	SM06
7	SM07

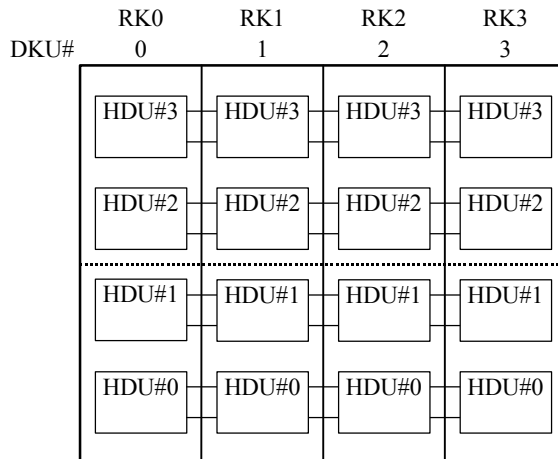
(*11) Reason Code

x'E1', x'10': No DCR PP
 x'E2', x'20': Subsystem busy
 x'E4', x'40': Staging time over
 x'E5', x'50': Cache or SM blockade
 x'E6', x'60': LDEV Warning

x'E7', x'70': Staging failure
 x'E8', x'80': P/S OFF
 x'E9' x'90': PreStaging canceled
 x'EA', x'a0': Cache over loaded
 x'EB', x'b0': Some MP's blockade

(*12) DKU#: x'0' to x'3' indicates DKU number. See the figure below.

HDU#: x'0' to x'3' indicates HDU number. See the figure below.



(*13) reason code

x'0': Pinned data exist

x'1': The shutdown of the power supply was occurred

x'2': Invalid Version/Revision exists

(*15) Recover LDEVs according to the procedure shown in [TRBL05-480](#).

(*16) Change pair status number

x'0': From simplex to duplex pending

x'1': From simplex to duplex

x'2': From pending duplex to duplex

x'3': From pending duplex to suspend

x'4': From duplex to suspend

x'5': From duplex to simplex

x'6': From pending duplex to simplex

x'7': From suspend to simplex

x'8': From suspend to duplex pending

x'9': From pending duplex to suspend (continue)

x'A': From pending duplex to suspend (complete)

x'B': From suspend (continue) to suspend

(*17) You can suppress reporting the HRC Service SIM to the HOST by RCU Option operation (PPRC support by HOST and Service SIM of HRC).

• Service level SIM

PPRC support by HOST	Service SIM or HRC	level of error	HRC
Yes	Report	DKC_SIM	Host Report
		DEV_SIM	Not Host Report
	Not Report	DKC_SIM	Not Host Report
		DEV_SIM	Not Host Report
No	Report	DKC_SIM	Host Report
		DEV_SIM	Host Report
	Not Report	DKC_SIM	Not Host Report
		DEV_SIM	Not Host Report

• Moderate or Serious level SIM

PPRC support by HOST	level of error	HRC
Yes	DKC_SIM	Host Report
	DEV_SIM	Not Host Report
No	DKC_SIM	Host Report
	DEV_SIM	Host Report

(*18) In case of HRC, SIMs reported from RCU are reported to the host by MCU.

Severity Level	RC of reported SIM for HRC
Acute or Serious	No modification
Moderate	No modification
Service (Not HRC SIM)	No modification
Service (HRC SIM)	Not reported

(*19) This temporary blocking is to recover the logical table on SM and be automatically recovered.

(*20) In case of the replacement of the cache memory PCB on the side having blocked SM (see [REP01-280 ~ 290](#) work ID = RCA1), insert the removed cache memory PCB again.

(*21) Isolate the error according to the procedure shown in [TRBL05-290](#).

(*22) The LDEV is blocked because of an error (inconsistency between data on the A and B sides) of configuration information stored in the SM. Recover the error following the instruction of the Technical Support Division.

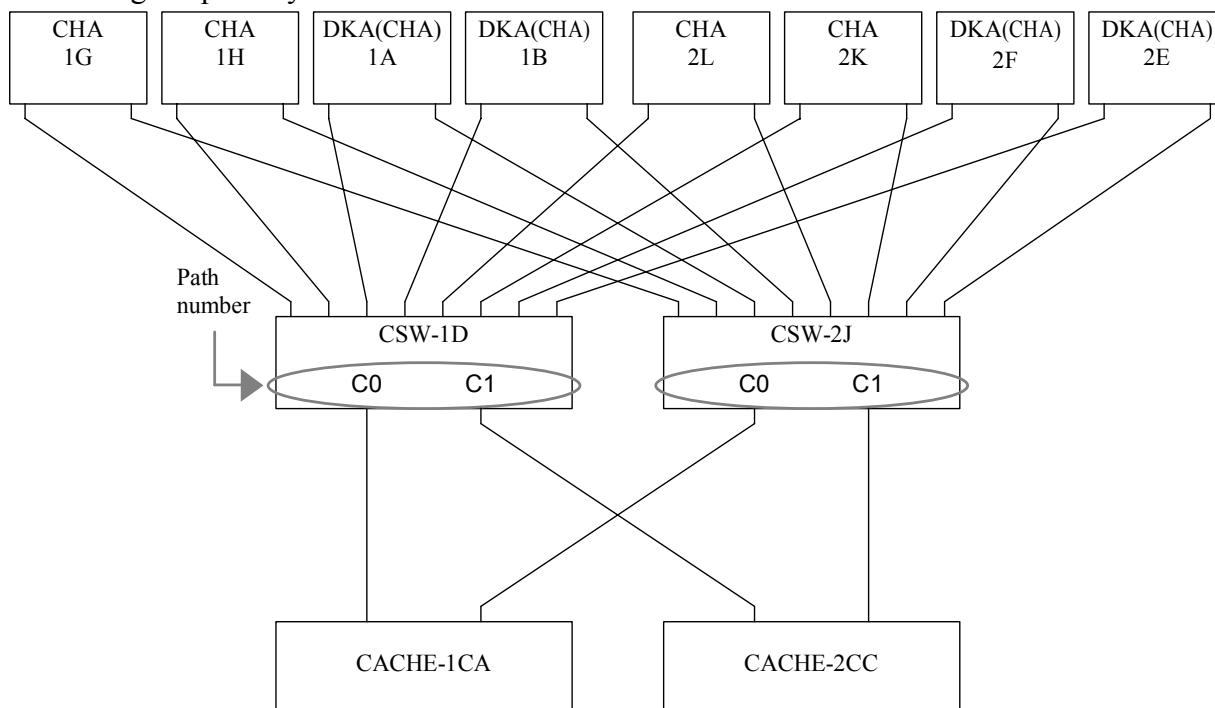
- (*23) X represents the X in a program version “?X-??-??/??”.
- (*24) Cache SIMM sizes of sides A and B are different because the replacement of the cache memory has been performed on one side only. Perform the replacement left referring to the description in the remark column.
- (*25) Type of the lost information is reported according to the bit position. (There may be the case that two or more bits are set.)
- (*26) Change pair status number
- x‘0’: Accepted Suspend Pair operation
 - x‘1’: Accepted Delete Pair operation (The R-VOL is in suspended status)
 - x‘2’: Accepted Delete Pair operation (The R-VOL is in duplex status)
 - x‘3’: Accepted Delete Pair operation (The R-VOL is in pending duplex status)
 - x‘4’: Completed Suspend Pair operation
 - x‘5’: Completed Delete Pair operation
- (*27) In the case that the error is detected in the area of ROM, the level of error is “Moderate” in other case “Service”.

(*29) C Path # shows the path number of the CHSN logical path.

See the figure below.

However, when all C0 path ~ C7 path is blockaded at the same time, the value of 0xF is taken.

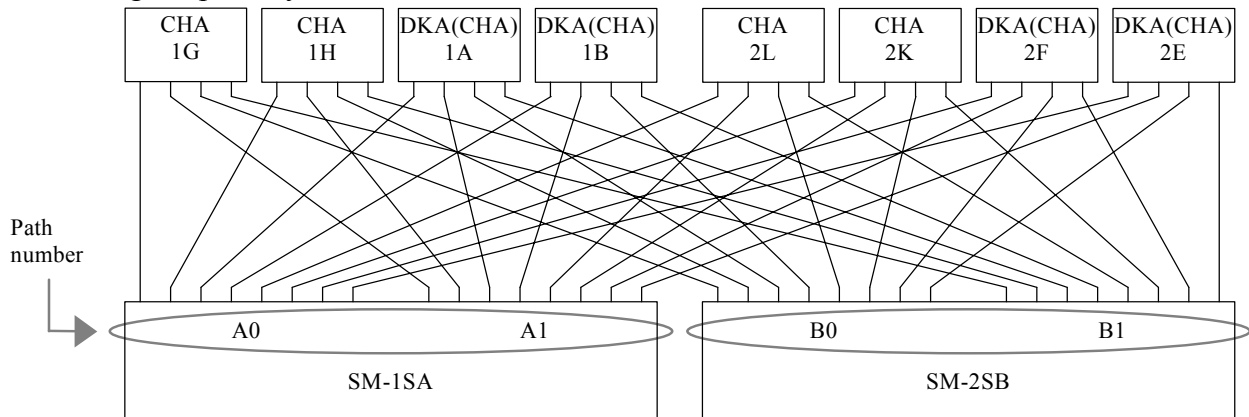
CHSN Logical path layout



(*30) If this reference code is reported, execute the micro-program exchange procedure (On-line) of the micro type “DKCMAIN”. ([MICRO04-10 to 04-150](#))

(*31) Path # A0, A1, B0, B1, C0, C1, D0, D1 indicates the SHSN Logical path number. See the figure below.

SHSN Logical path layout

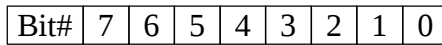


(*32) In the case that there are no redundancy of drive the level of error is “Serious”.

(*33) In the fibre channel connection of the HORC, this SIM may be issued on the MCU side when the microprogram of the RCU is replaced.

(*34) CU# is detected only lower figure in SIM-RC. (CU# 0x0 ~ 0xF)
Look at the SVP information - Content SIM - Error Location.

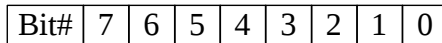
(*35) CHA PCB#: Content of high 5 Bit indicates the CHA PCB number. See the figure below.



Content of high 5 Bit indicates the Information.

PORT# in PCB: Content of low 3 Bit (x'0' to x'7') indicates the PORT number in PCB.

See the figure below.



Content of low 3 bit indicates the Port# in PCB.

Code of CHA PORT# and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	CHA-1G CL1-A	x'01'	CHA-1G CL3-A	x'02'	CHA-1G CL5-A	x'03'	CHA-1G CL7-A
x'04'	CHA-1G CL1-B	x'05'	CHA-1G CL3-B	x'06'	CHA-1G CL5-B	x'07'	CHA-1G CL7-B
x'08'	CHA-1H CL1-E	x'09'	CHA-1H CL3-E	x'0A'	CHA-1H CL5-E	x'0B'	CHA-1H CL7-E
x'0C'	CHA-1H CL1-F	x'0D'	CHA-1H CL3-F	x'0E'	CHA-1H CL5-F	x'0F'	CHA-1H CL7-F
x'40'	CHA-1A CL9-A	x'41'	CHA-1A CLB-A	x'42'	CHA-1A CLD-A	x'43'	CHA-1A CLF-A
x'44'	CHA-1A CL9-B	x'45'	CHA-1A CLB-B	x'46'	CHA-1A CLD-B	x'47'	CHA-1A CLF-B
x'48'	CHA-1B CL9-E	x'49'	CHA-1B CLB-E	x'4A'	CHA-1B CLD-E	x'4B'	CHA-1B CLF-E
x'4C'	CHA-1B CL9-F	x'4D'	CHA-1B CLB-F	x'4E'	CHA-1B CLD-F	x'4F'	CHA-1B CLF-F
x'80'	CHA-2L CL2-A	x'81'	CHA-2L CL4-A	x'82'	CHA-2L CL6-A	x'83'	CHA-2L CL8-A
x'84'	CHA-2L CL2-B	x'85'	CHA-2L CL4-B	x'86'	CHA-2L CL6-B	x'87'	CHA-2L CL8-B
x'88'	CHA-2K CL2-E	x'89'	CHA-2K CL4-E	x'8A'	CHA-2K CL6-E	x'8B'	CHA-2K CL8-E
x'8C'	CHA-2K CL2-F	x'8D'	CHA-2K CL4-F	x'8E'	CHA-2K CL6-F	x'8F'	CHA-2K CL8-F
x'C0'	CHA-2F CLA-A	x'C1'	CHA-2F CLC-A	x'C2'	CHA-2F CLE-A	x'C3'	CHA-2F CLG-A
x'C4'	CHA-2F CLA-B	x'C5'	CHA-2F CLC-B	x'C6'	CHA-2F CLE-B	x'C7'	CHA-2F CLG-B
x'C8'	CHA-2E CLA-E	x'C9'	CHA-2E CLC-E	x'CA'	CHA-2E CLE-E	x'CB'	CHA-2E CLG-E
x'CC'	CHA-2E CLA-F	x'CD'	CHA-2E CLC-F	x'CE'	CHA-2E CLE-F	x'CF'	CHA-2E CLG-F

(*36) FCA# in PCB: Content of low 2 Bit (x'0' to x'3') indicates the FCA number in PCB.

See the figure below.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---



Content of low 2 bit indicates the FCA# in PCB.

Code of DKA FCA# and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	DKA-1A FCA0	x'01'	DKA-1A FCA1	x'02'	DKA-1A FCA2	x'03'	DKA-1A FCA3
x'08'	DKA-1B FCA0	x'09'	DKA-1B FCA1	x'0A'	DKA-1B FCA2	x'0B'	DKA-1B FCA3
x'40'	DKA-2F FCA0	x'41'	DKA-2F FCA1	x'42'	DKA-2F FCA2	x'43'	DKA-2F FCA3
x'48'	DKA-2E FCA0	x'49'	DKA-2E FCA1	x'4A'	DKA-2E FCA2	x'4B'	DKA-2E FCA3

Content of FSW PCB# z'0' to z'3' indicates the each PCB, FSW number corresponded MP# in PCB. See the table below.

PCB#	FCA#	FSW PCB#			
		FSW#0	FSW#1	FSW#2	FSW#3
DKA-1A	0	FSW001-L	FSW101-L	FSW201-L	FSW301-L
	1	FSW023-L	FSW123-L	FSW223-L	FSW323-L
	2	FSW001-L	FSW101-L	FSW201-L	FSW301-L
	3	FSW023-L	FSW123-L	FSW223-L	FSW323-L
DKA-2F	0	FSW001-U	FSW101-U	FSW201-U	FSW301-U
	1	FSW023-U	FSW123-U	FSW223-U	FSW323-U
	2	FSW001-U	FSW101-U	FSW201-U	FSW301-U
	3	FSW023-U	FSW123-U	FSW223-U	FSW323-U

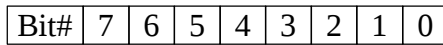
(*37) Recover the error according to the procedure shown in [TRBL05-630](#).

(*38) Recover the error according to the procedure shown in [TRBL05-640](#).

(*39) If this reference code is reported, please conform as shown below.

1. Setting topology
2. HBA/SWITCH (supported or not)

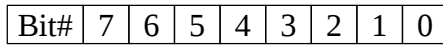
(*40) CHA PCB#: Content of high 5 Bit indicates the CHA PCB number. See the figure below.



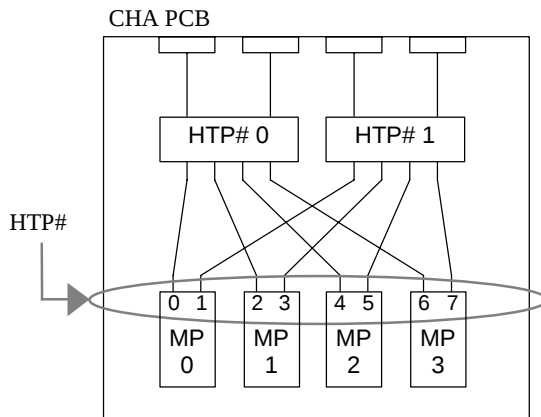
Content of high 5 Bit indicates the Information.

HTP#: Content of low 3 Bit (x'0' to x'7') indicates the HTP number in PCB.

See the figure below.



Content of low 3 Bit indicates the Information.



Code of CHA HTP# and correspondence table of location:

Code	Location	Code	Location	Code	Location	Code	Location
x'00'	CHA-1G HTP0	x'01'	CHA-1G HTP1	x'02'	CHA-1G HTP2	x'03'	CHA-1G HTP3
x'04'	CHA-1G HTP4	x'05'	CHA-1G HTP5	x'06'	CHA-1G HTP6	x'07'	CHA-1G HTP7
x'08'	CHA-1H HTP0	x'09'	CHA-1H HTP1	x'0A'	CHA-1H HTP2	x'0B'	CHA-1H HTP3
x'0C'	CHA-1H HTP4	x'0D'	CHA-1H HTP5	x'0E'	CHA-1H HTP6	x'0F'	CHA-1H HTP7
x'40'	CHA-1A HTP0	x'41'	CHA-1A HTP1	x'42'	CHA-1A HTP2	x'43'	CHA-1A HTP3
x'44'	CHA-1A HTP4	x'45'	CHA-1A HTP5	x'46'	CHA-1A HTP6	x'47'	CHA-1A HTP7
x'48'	CHA-1B HTP0	x'49'	CHA-1B HTP1	x'4A'	CHA-1B HTP2	x'4B'	CHA-1B HTP3
x'4C'	CHA-1B HTP4	x'4D'	CHA-1B HTP5	x'4E'	CHA-1B HTP6	x'4F'	CHA-1B HTP7
x'80'	CHA-2L HTP0	x'81'	CHA-2L HTP1	x'82'	CHA-2L HTP2	x'83'	CHA-2L HTP3
x'84'	CHA-2L HTP4	x'85'	CHA-2L HTP5	x'86'	CHA-2L HTP6	x'87'	CHA-2L HTP7
x'88'	CHA-2K HTP0	x'89'	CHA-2K HTP1	x'8A'	CHA-2K HTP2	x'8B'	CHA-2K HTP3
x'8C'	CHA-2K HTP4	x'8D'	CHA-2K HTP5	x'8E'	CHA-2K HTP6	x'8F'	CHA-2K HTP7
x'C0'	CHA-2F HTP0	x'C1'	CHA-2F HTP1	x'C2'	CHA-2F HTP2	x'C3'	CHA-2F HTP3
x'C4'	CHA-2F HTP4	x'C5'	CHA-2F HTP5	x'C6'	CHA-2F HTP6	x'C7'	CHA-2F HTP7
x'C8'	CHA-2E HTP0	x'C9'	CHA-2E HTP1	x'CA'	CHA-2E HTP2	x'CB'	CHA-2E HTP3
x'CC'	CHA-2E HTP4	x'CD'	CHA-2E HTP5	x'CE'	CHA-2E HTP6	x'CF'	CHA-2E HTP7

(*41) The following information of SIM = AC90 is valid.

	0	1	2	3	4	5	6	7
byte40	Port number (Eg. CL1-A=0, CL3-A=1)							
byte41								
byte42	HDEV number							
byte43								
byte44								
byte45								
byte46	LDEV number of executing command processing							
byte47								
byte48								
byte49								
byte50	Starting LBA address in CDB							
byte51								
byte52								
byte53								
byte54								
byte55								
byte56								
byte57								
byte58	Transfer Length in CDB							
byte59								
byte60								
byte61								
byte62	World Wide Name (WWN) of the host which issued the write request							
byte63								
byte64								
byte65								
byte66								
byte67								
byte68								
byte69								
byte70	Detected error item(s). Bit-OR of the left items. Check kind 0x01: Check-F1 0x02: Check-L 0x04: Check-F2 0x08: Check-F3							
byte71	Not used							
~								
byte7F								

(*42) The following information of SIM = 21D0, 21D1, 21D2, EFD0 is valid.

	0	1	2	3	4	5	6	7
byte40 byte41	Port number (Eg. CL1-A=0, CL1-B=1)							
byte42 byte43	LDEV number (lower 2 bytes)							
byte44 ~ byte47	VDEV number							
byte48 ~ byte4F	Forehand WWN of External Storage connection							
byte50 ~ byte59	Product Number of External Storage							
byte5A ~ byte61	Vendor Name							
byte62 ~ byte71	Model name of External Storage							
byte72 byte73	External LUN#							
byte74	Bit determining whether info identifying Binary/ ASCII for the connected subsystem serial number is valid	Info identifying Binary/ ASCII for the connected subsystem serial number	Reserved					
byte75 ~ byte78	LDEV number							
byte79 ~ byte7F	Reserved							

byte0x74 bit0: Bit determining whether the information identifying Binary/ASCII for the connected subsystem serial number is valid

Bit	Description
ON (1b)	Information identifying whether the connected subsystem serial number is in the Binary/ASCII format is "Valid".
OFF (0b)	Information identifying whether the connected subsystem serial number is in the Binary/ASCII format is "Invalid".

byte0x74 bit1: Information identifying Binary/ASCII for the connected subsystem serial number

Bit	Description
ON (1b)	The serial number of the connected subsystem is in the Binary format.
OFF (0b)	The serial number of the connected subsystem is in the ASCII format.

Serial number is not acquired from external storage, NULL (0) is set in the Serial number of the connected subsystem.

Moreover, Serial number of the connected subsystem is stored by left justify in the case of Binary and stored by right justify in the case of ASCII.

When external storage in the following matrix becomes the target of SIM, information of Model name of External Storage in the SIM is different from that of actual product name. When the external storage in the following matrix is connected and SIM is reported, check Model name of External Storage in the SIM against the actual product name to identify target external storage of the SIM.

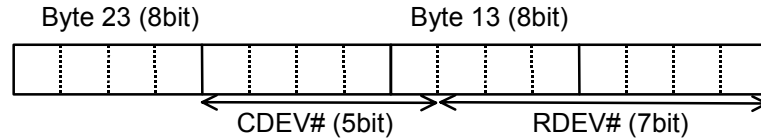
SIM			Actual product		
Vendor Name	Model Name of External Storage	Product Number of External Storage (*1)	Vendor	Product Name	Display in console
HITACHI	9500V	D600xxxx	HITACHI	9570V	9500V
HITACHI	9500V	D60Jxxxx	HITACHI	9530V	9500V
HITACHI	9500V	D60Hxxxx	HITACHI	9580V/9585V	9500V
HITACHI	9500V	71xxxxxx	HITACHI	WMS100	WMS
HITACHI	9500V	73xxxxxx	HITACHI	AMS200	AMS
HITACHI	9500V	75xxxxxx	HITACHI	AMS500	AMS
HITACHI	9500V	77xxxxxx	HITACHI	AMS1000	AMS
HITACHI	AMS	83xxxxxx	HITACHI	AMS2100	AMS
HITACHI	AMS	85xxxxxx	HITACHI	AMS2300	AMS
HITACHI	AMS	87xxxxxx	HITACHI	AMS2500	AMS

(*1) "xxxx" at Product Number of External Storage means arbitrary number or character.

When target product is 9500V series, "xxxx" means the last 4 digits of the serial number.

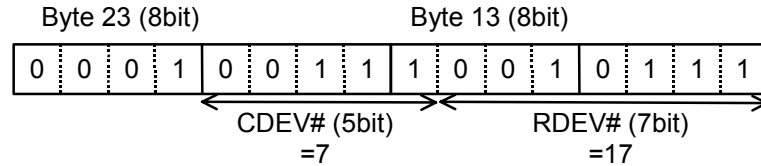
As for external storage other than those above, information of Model name of External Storage in SIM and that of actual product name is the same. Refer to FRS for detail.

(*43) Drive number XXX indicates the CDEV# / RDEV#. See the table below.



Refer to “Physical-Logical Device Matrixes” from [THEORY05-10](#) for CDEV# / RDEV# (C/R#)-Disk Drive Number correspondence.

Eg.) For SIM-RC EF13-97.



		CDEV															
		0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
RDEV	0x00	000	080	100	180	200	280	300	380	400	480	500	580	600	680	700	780
	0x01	001	081	101	181	201	281	301	381	401	481	501	581	601	681	701	781
	0x02	002	082	102	182	202	282	302	382	402	482	502	582	602	682	702	782
	0x03	003	083	103	183	203	283	303	383	403	483	503	583	603	683	703	783
	0x04	004	084	104	184	204	284	304	384	404	484	504	584	604	684	704	784
	0x05	005	085	105	185	205	285	305	385	405	485	505	585	605	685	705	785
	0x06	006	086	106	186	206	286	306	386	406	486	506	586	606	686	706	786
	0x07	007	087	107	187	207	287	307	387	407	487	507	587	607	687	707	787
	0x08	008	088	108	188	208	288	308	388	408	488	508	588	608	688	708	788
	0x09	009	089	109	189	209	289	309	389	409	489	509	589	609	689	709	789
	0x0A	00A	08A	10A	18A	20A	28A	30A	38A	40A	48A	50A	58A	60A	68A	70A	78A
	0x0B	00B	08B	10B	18B	20B	28B	30B	38B	40B	48B	50B	58B	60B	68B	70B	78B
	0x0C	00C	08C	10C	18C	20C	28C	30C	38C	40C	48C	50C	58C	60C	68C	70C	78C
	0x0D	00D	08D	10D	18D	20D	28D	30D	38D	40D	48D	50D	58D	60D	68D	70D	78D
	0x0E	00E	08E	10E	18E	20E	28E	30E	38E	40E	48E	50E	58E	60E	68E	70E	78E
	0x0F	00F	08F	10F	18F	20F	28F	30F	38F	40F	48F	50F	58F	60F	68F	70F	78F
	0x10	010	090	110	190	210	290	310	390	410	490	510	590	610	690	710	790
	0x11	011	091	111	191	211	291	311	391	411	491	511	591	611	691	711	791
	0x12	012	092	112	192	212	292	312	392	412	492	512	592	612	692	712	792
	0x13	013	093	113	193	213	293	313	393	413	493	513	593	613	693	713	793
	0x14	014	094	114	194	214	294	314	394	414	494	514	594	614	694	714	794
	0x15	015	095	115	195	215	295	315	395	415	495	515	595	615	695	715	795
	0x16	016	096	116	196	216	296	316	396	416	496	516	596	616	696	716	796
	0x17	017	097	117	197	217	297	317	397	417	497	517	597	617	697	717	797
	0x18	018	098	118	198	218	298	318	398	418	498	518	598	618	698	718	798
	0x19	019	099	119	199	219	299	319	399	419	499	519	599	619	699	719	799
	0x1A	01A	09A	11A	19A	21A	29A	31A	39A	41A	49A	51A	59A	61A	69A	71A	79A
	0x1B	01B	09B	11B	19B	21B	29B	31B	39B	41B	49B	51B	59B	61B	69B	71B	79B
	0x1C	01C	09C	11C	19C	21C	29C	31C	39C	41C	49C	51C	59C	61C	69C	71C	79C
	0x1D	01D	09D	11D	19D	21D	29D	31D	39D	41D	49D	51D	59D	61D	69D	71D	79D
	0x1E	01E	09E	11E	19E	21E	29E	31E	39E	41E	49E	51E	59E	61E	69E	71E	79E
	0x1F	01F	09F	11F	19F	21F	29F	31F	39F	41F	49F	51F	59F	61F	69F	71F	79F

SIMRC02-390

DKC615I

Rev.0 / May.2007

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		CDEV															
		0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
RDEV	0x20	020	0A0	120	1A0	220	2A0	320	3A0	420	4A0	520	5A0	620	6A0	720	7A0
	0x21	021	0A1	121	1A1	221	2A1	321	3A1	421	4A1	521	5A1	621	6A1	721	7A1
	0x22	022	0A2	122	1A2	222	2A2	322	3A2	422	4A2	522	5A2	622	6A2	722	7A2
	0x23	023	0A3	123	1A3	223	2A3	323	3A3	423	4A3	523	5A3	623	6A3	723	7A3
	0x24	024	0A4	124	1A4	224	2A4	324	3A4	424	4A4	524	5A4	624	6A4	724	7A4
	0x25	025	0A5	125	1A5	225	2A5	325	3A5	425	4A5	525	5A5	625	6A5	725	7A5
	0x26	026	0A6	126	1A6	226	2A6	326	3A6	426	4A6	526	5A6	626	6A6	726	7A6
	0x27	027	0A7	127	1A7	227	2A7	327	3A7	427	4A7	527	5A7	627	6A7	727	7A7
	0x28	028	0A8	128	1A8	228	2A8	328	3A8	428	4A8	528	5A8	628	6A8	728	7A8
	0x29	029	0A9	129	1A9	229	2A9	329	3A9	429	4A9	529	5A9	629	6A9	729	7A9
	0x2A	02A	0AA	12A	1AA	22A	2AA	32A	3AA	42A	4AA	52A	5AA	62A	6AA	72A	7AA
	0x2B	02B	0AB	12B	1AB	22B	2AB	32B	3AB	42B	4AB	52B	5AB	62B	6AB	72B	7AB
	0x2C	02C	0AC	12C	1AC	22C	2AC	32C	3AC	42C	4AC	52C	5AC	62C	6AC	72C	7AC
	0x2D	02D	0AD	12D	1AD	22D	2AD	32D	3AD	42D	4AD	52D	5AD	62D	6AD	72D	7AD
	0x2E	02E	0AE	12E	1AE	22E	2AE	32E	3AE	42E	4AE	52E	5AE	62E	6AE	72E	7AE
	0x2F	02F	0AF	12F	1AF	22F	2AF	32F	3AF	42F	4AF	52F	5AF	62F	6AF	72F	7AF
	0x30	030	0B0	130	1B0	230	2B0	330	3B0	430	4B0	530	5B0	630	6B0	730	7B0
	0x31	031	0B1	131	1B1	231	2B1	331	3B1	431	4B1	531	5B1	631	6B1	731	7B1
	0x32	032	0B2	132	1B2	232	2B2	332	3B2	432	4B2	532	5B2	632	6B2	732	7B2
	0x33	033	0B3	133	1B3	233	2B3	333	3B3	433	4B3	533	5B3	633	6B3	733	7B3
	0x34	034	0B4	134	1B4	234	2B4	334	3B4	434	4B4	534	5B4	634	6B4	734	7B4
	0x35	035	0B5	135	1B5	235	2B5	335	3B5	435	4B5	535	5B5	635	6B5	735	7B5
	0x36	036	0B6	136	1B6	236	2B6	336	3B6	436	4B6	536	5B6	636	6B6	736	7B6
	0x37	037	0B7	137	1B7	237	2B7	337	3B7	437	4B7	537	5B7	637	6B7	737	7B7
	0x38	038	0B8	138	1B8	238	2B8	338	3B8	438	4B8	538	5B8	638	6B8	738	7B8
	0x39	039	0B9	139	1B9	239	2B9	339	3B9	439	4B9	539	5B9	639	6B9	739	7B9
	0x3A	03A	0BA	13A	1BA	23A	2BA	33A	3BA	43A	4BA	53A	5BA	63A	6BA	73A	7BA
	0x3B	03B	0BB	13B	1BB	23B	2BB	33B	3BB	43B	4BB	53B	5BB	63B	6BB	73B	7BB
	0x3C	03C	0BC	13C	1BC	23C	2BC	33C	3BC	43C	4BC	53C	5BC	63C	6BC	73C	7BC
	0x3D	03D	0BD	13D	1BD	23D	2BD	33D	3BD	43D	4BD	53D	5BD	63D	6BD	73D	7BD
	0x3E	03E	0BE	13E	1BE	23E	2BE	33E	3BE	43E	4BE	53E	5BE	63E	6BE	73E	7BE
	0x3F	03F	0BF	13F	1BF	23F	2BF	33F	3BF	43F	4BF	53F	5BF	63F	6BF	73F	7BF
	0x40	040	0C0	140	1C0	240	2C0	340	3C0	440	4C0	540	5C0	640	6C0	740	7C0
	0x41	041	0C1	141	1C1	241	2C1	341	3C1	441	4C1	541	5C1	641	6C1	741	7C1
	0x42	042	0C2	142	1C2	242	2C2	342	3C2	442	4C2	542	5C2	642	6C2	742	7C2
	0x43	043	0C3	143	1C3	243	2C3	343	3C3	443	4C3	543	5C3	643	6C3	743	7C3
	0x44	044	0C4	144	1C4	244	2C4	344	3C4	444	4C4	544	5C4	644	6C4	744	7C4
	0x45	045	0C5	145	1C5	245	2C5	345	3C5	445	4C5	545	5C5	645	6C5	745	7C5
	0x46	046	0C6	146	1C6	246	2C6	346	3C6	446	4C6	546	5C6	646	6C6	746	7C6
	0x47	047	0C7	147	1C7	247	2C7	347	3C7	447	4C7	547	5C7	647	6C7	747	7C7
	0x48	048	0C8	148	1C8	248	2C8	348	3C8	448	4C8	548	5C8	648	6C8	748	7C8
	0x49	049	0C9	149	1C9	249	2C9	349	3C9	449	4C9	549	5C9	649	6C9	749	7C9
	0x4A	04A	0CA	14A	1CA	24A	2CA	34A	3CA	44A	4CA	54A	5CA	64A	6CA	74A	7CA
	0x4B	04B	0CB	14B	1CB	24B	2CB	34B	3CB	44B	4CB	54B	5CB	64B	6CB	74B	7CB
	0x4C	04C	0CC	14C	1CC	24C	2CC	34C	3CC	44C	4CC	54C	5CC	64C	6CC	74C	7CC
	0x4D	04D	0CD	14D	1CD	24D	2CD	34D	3CD	44D	4CD	54D	5CD	64D	6CD	74D	7CD
	0x4E	04E	0CE	14E	1CE	24E	2CE	34E	3CE	44E	4CE	54E	5CE	64E	6CE	74E	7CE
	0x4F	04F	0CF	14F	1CF	24F	2CF	34F	3CF	44F	4CF	54F	5CF	64F	6CF	74F	7CF

SIMRC02-400

DKC6151

Rev.0 / May.2007

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		CDEV															
		0x10	0x11	0x12	0x13	0x14	0x15	0x16	0x17	0x18	0x19	0x1A	0x1B	0x1C	0x1D	0x1E	0x1F
RDEV	0x00	800	880	900	980	A00	A80	B00	B80	C00	C80	D00	D80	E00	E80	F00	F80
	0x01	801	881	901	981	A01	A81	B01	B81	C01	C81	D01	D81	E01	E81	F01	F81
	0x02	802	882	902	982	A02	A82	B02	B82	C02	C82	D02	D82	E02	E82	F02	F82
	0x03	803	883	903	983	A03	A83	B03	B83	C03	C83	D03	D83	E03	E83	F03	F83
	0x04	804	884	904	984	A04	A84	B04	B84	C04	C84	D04	D84	E04	E84	F04	F84
	0x05	805	885	905	985	A05	A85	B05	B85	C05	C85	D05	D85	E05	E85	F05	F85
	0x06	806	886	906	986	A06	A86	B06	B86	C06	C86	D06	D86	E06	E86	F06	F86
	0x07	807	887	907	987	A07	A87	B07	B87	C07	C87	D07	D87	E07	E87	F07	F87
	0x08	808	888	908	988	A08	A88	B08	B88	C08	C88	D08	D88	E08	E88	F08	F88
	0x09	809	889	909	989	A09	A89	B09	B89	C09	C89	D09	D89	E09	E89	F09	F89
	0x0A	80A	88A	90A	98A	A0A	A8A	B0A	B8A	C0A	C8A	D0A	D8A	E0A	E8A	F0A	F8A
	0x0B	80B	88B	90B	98B	A0B	A8B	B0B	B8B	C0B	C8B	D0B	D8B	E0B	E8B	F0B	F8B
	0x0C	80C	88C	90C	98C	A0C	A8C	B0C	B8C	C0C	C8C	D0C	D8C	E0C	E8C	F0C	F8C
	0x0D	80D	88D	90D	98D	A0D	A8D	B0D	B8D	C0D	C8D	D0D	D8D	E0D	E8D	F0D	F8D
	0x0E	80E	88E	90E	98E	A0E	A8E	B0E	B8E	C0E	C8E	D0E	D8E	E0E	E8E	F0E	F8E
	0x0F	80F	88F	90F	98F	A0F	A8F	B0F	B8F	C0F	C8F	D0F	D8F	E0F	E8F	F0F	F8F
	0x10	810	890	910	990	A10	A90	B10	B90	C10	C90	D10	D90	E10	E90	F10	F90
	0x11	811	891	911	991	A11	A91	B11	B91	C11	C91	D11	D91	E11	E91	F11	F91
	0x12	812	892	912	992	A12	A92	B12	B92	C12	C92	D12	D92	E12	E92	F12	F92
	0x13	813	893	913	993	A13	A93	B13	B93	C13	C93	D13	D93	E13	E93	F13	F93
	0x14	814	894	914	994	A14	A94	B14	B94	C14	C94	D14	D94	E14	E94	F14	F94
	0x15	815	895	915	995	A15	A95	B15	B95	C15	C95	D15	D95	E15	E95	F15	F95
	0x16	816	896	916	996	A16	A96	B16	B96	C16	C96	D16	D96	E16	E96	F16	F96
	0x17	817	897	917	997	A17	A97	B17	B97	C17	C97	D17	D97	E17	E97	F17	F97
	0x18	818	898	918	998	A18	A98	B18	B98	C18	C98	D18	D98	E18	E98	F18	F98
	0x19	819	899	919	999	A19	A99	B19	B99	C19	C99	D19	D99	E19	E99	F19	F99
	0x1A	81A	89A	91A	99A	A1A	A9A	B1A	B9A	C1A	C9A	D1A	D9A	E1A	E9A	F1A	F9A
	0x1B	81B	89B	91B	99B	A1B	A9B	B1B	B9B	C1B	C9B	D1B	D9B	E1B	E9B	F1B	F9B
	0x1C	81C	89C	91C	99C	A1C	A9C	B1C	B9C	C1C	C9C	D1C	D9C	E1C	E9C	F1C	F9C
	0x1D	81D	89D	91D	99D	A1D	A9D	B1D	B9D	C1D	C9D	D1D	D9D	E1D	E9D	F1D	F9D
	0x1E	81E	89E	91E	99E	A1E	A9E	B1E	B9E	C1E	C9E	D1E	D9E	E1E	E9E	F1E	F9E
	0x1F	81F	89F	91F	99F	A1F	A9F	B1F	B9F	C1F	C9F	D1F	D9F	E1F	E9F	F1F	F9F
	0x20	820	8A0	920	9A0	A20	AA0	B20	BA0	C20	CA0	D20	DA0	E20	EA0	F20	FA0
	0x21	821	8A1	921	9A1	A21	AA1	B21	BA1	C21	CA1	D21	DA1	E21	EA1	F21	FA1
	0x22	822	8A2	922	9A2	A22	AA2	B22	BA2	C22	CA2	D22	DA2	E22	EA2	F22	FA2
	0x23	823	8A3	923	9A3	A23	AA3	B23	BA3	C23	CA3	D23	DA3	E23	EA3	F23	FA3
	0x24	824	8A4	924	9A4	A24	AA4	B24	BA4	C24	CA4	D24	DA4	E24	EA4	F24	FA4
	0x25	825	8A5	925	9A5	A25	AA5	B25	BA5	C25	CA5	D25	DA5	E25	EA5	F25	FA5
	0x26	826	8A6	926	9A6	A26	AA6	B26	BA6	C26	CA6	D26	DA6	E26	EA6	F26	FA6
	0x27	827	8A7	927	9A7	A27	AA7	B27	BA7	C27	CA7	D27	DA7	E27	EA7	F27	FA7
	0x28	828	8A8	928	9A8	A28	AA8	B28	BA8	C28	CA8	D28	DA8	E28	EA8	F28	FA8
	0x29	829	8A9	929	9A9	A29	AA9	B29	BA9	C29	CA9	D29	DA9	E29	EA9	F29	FA9
	0x2A	82A	8AA	92A	9AA	A2A	AAA	B2A	BAA	C2A	CAA	D2A	DAA	E2A	EAA	F2A	FAA
	0x2B	82B	8AB	92B	9AB	A2B	AAB	B2B	BAB	C2B	CAB	D2B	DAB	E2B	EAB	F2B	FAB
	0x2C	82C	8AC	92C	9AC	A2C	AAC	B2C	BAC	C2C	CAC	D2C	DAC	E2C	EAC	F2C	FAC
	0x2D	82D	8AD	92D	9AD	A2D	AAD	B2D	BAD	C2D	CAD	D2D	DAD	E2D	EAD	F2D	FAD
	0x2E	82E	8AE	92E	9AE	A2E	AAE	B2E	BAE	C2E	CAE	D2E	DAE	E2E	EAE	F2E	FAE
	0x2F	82F	8AF	92F	9AF	A2F	AAF	B2F	BAF	C2F	CAF	D2F	DAF	E2F	EAF	F2F	FAF

SIMRC02-410

DKC615I

Rev.0 / May.2007

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		CDEV															
		0x10	0x11	0x12	0x13	0x14	0x15	0x16	0x17	0x18	0x19	0x1A	0x1B	0x1C	0x1D	0x1E	0x1F
RDEV	0x30	830	8B0	930	9B0	A30	AB0	B30	BB0	C30	CB0	D30	DB0	E30	EB0	F30	FB0
	0x31	831	8B1	931	9B1	A31	AB1	B31	BB1	C31	CB1	D31	DB1	E31	EB1	F31	FB1
	0x32	832	8B2	932	9B2	A32	AB2	B32	BB2	C32	CB2	D32	DB2	E32	EB2	F32	FB2
	0x33	833	8B3	933	9B3	A33	AB3	B33	BB3	C33	CB3	D33	DB3	E33	EB3	F33	FB3
	0x34	834	8B4	934	9B4	A34	AB4	B34	BB4	C34	CB4	D34	DB4	E34	EB4	F34	FB4
	0x35	835	8B5	935	9B5	A35	AB5	B35	BB5	C35	CB5	D35	DB5	E35	EB5	F35	FB5
	0x36	836	8B6	936	9B6	A36	AB6	B36	BB6	C36	CB6	D36	DB6	E36	EB6	F36	FB6
	0x37	837	8B7	937	9B7	A37	AB7	B37	BB7	C37	CB7	D37	DB7	E37	EB7	F37	FB7
	0x38	838	8B8	938	9B8	A38	AB8	B38	BB8	C38	CB8	D38	DB8	E38	EB8	F38	FB8
	0x39	839	8B9	939	9B9	A39	AB9	B39	BB9	C39	CB9	D39	DB9	E39	EB9	F39	FB9
	0x3A	83A	8BA	93A	9BA	A3A	ABA	B3A	BBA	C3A	CBA	D3A	DBA	E3A	EBA	F3A	FBA
	0x3B	83B	8BB	93B	9BB	A3B	ABB	B3B	BBB	C3B	CBB	D3B	DBB	E3B	EBB	F3B	FBB
	0x3C	83C	8BC	93C	9BC	A3C	ABC	B3C	BBC	C3C	CBC	D3C	DBC	E3C	EBC	F3C	FBC
	0x3D	83D	8BD	93D	9BD	A3D	ABD	B3D	BBD	C3D	CBD	D3D	DBD	E3D	EBD	F3D	FBD
	0x3E	83E	8BE	93E	9BE	A3E	ABE	B3E	BBE	C3E	CBE	D3E	DBE	E3E	EBE	F3E	FBE
	0x3F	83F	8BF	93F	9BF	A3F	ABF	B3F	BBF	C3F	CBF	D3F	DBF	E3F	EBF	F3F	FBF
	0x40	840	8C0	940	9C0	A40	AC0	B40	BC0	C40	CC0	D40	DC0	E40	EC0	F40	FC0
	0x41	841	8C1	941	9C1	A41	AC1	B41	BC1	C41	CC1	D41	DC1	E41	EC1	F41	FC1
	0x42	842	8C2	942	9C2	A42	AC2	B42	BC2	C42	CC2	D42	DC2	E42	EC2	F42	FC2
	0x43	843	8C3	943	9C3	A43	AC3	B43	BC3	C43	CC3	D43	DC3	E43	EC3	F43	FC3
	0x44	844	8C4	944	9C4	A44	AC4	B44	BC4	C44	CC4	D44	DC4	E44	EC4	F44	FC4
	0x45	845	8C5	945	9C5	A45	AC5	B45	BC5	C45	CC5	D45	DC5	E45	EC5	F45	FC5
	0x46	846	8C6	946	9C6	A46	AC6	B46	BC6	C46	CC6	D46	DC6	E46	EC6	F46	FC6
	0x47	847	8C7	947	9C7	A47	AC7	B47	BC7	C47	CC7	D47	DC7	E47	EC7	F47	FC7
	0x48	848	8C8	948	9C8	A48	AC8	B48	BC8	C48	CC8	D48	DC8	E48	EC8	F48	FC8
	0x49	849	8C9	949	9C9	A49	AC9	B49	BC9	C49	CC9	D49	DC9	E49	EC9	F49	FC9
	0x4A	84A	8CA	94A	9CA	A4A	ACA	B4A	BCA	C4A	CCA	D4A	DCA	E4A	ECA	F4A	FCA
	0x4B	84B	8CB	94B	9CB	A4B	ACB	B4B	BCB	C4B	CCB	D4B	DCB	E4B	ECB	F4B	FCB
	0x4C	84C	8CC	94C	9CC	A4C	ACC	B4C	BCC	C4C	CCC	D4C	DCC	E4C	ECC	F4C	FCC
	0x4D	84D	8CD	94D	9CD	A4D	ACD	B4D	BCD	C4D	CCD	D4D	DCD	E4D	ECD	F4D	FCD
	0x4E	84E	8CE	94E	9CE	A4E	ACE	B4E	BCE	C4E	CCE	D4E	DCE	E4E	ECE	F4E	FCE
	0x4F	84F	8CF	94F	9CF	A4F	ACF	B4F	BCF	C4F	CCF	D4F	DCF	E4F	ECF	F4F	FCF

(*44) SM blocked SIMs (RC = FFE2-0x or FFZ1-0x) reported at the same time, have priority over this SIM. If SHSN path status return to “normal” after those recovery action, complete this SIM together.

(*45) CACHE blocked SIMs (RC = FFF4-0x or FFF3-0x) reported at the same time, have priority over this SIM. If CHSN path status return to “normal” after those recovery action, complete this SIM together.

(*46) In case of PS/OFF (normal end), the battery backup to CM will be blocked since the battery backup to SM will be prioritized.

In case of PS/ON, the SIM may be reported according to the SM/CM status; if it is definitely caused by the backup blocking as above, please ignore the location that the SIM has indicated.

(*47) SIM = 2194 is valid

	0	1	2	3	4	5	6	7
Byte40 Byte43	0x0000B6AF (Related SSB Code)							
Byte44 Byte47	SIM type + Port#							
Byte48 Byte4B	Starting supervise at time							
Byte4C Byte4F	Starting supervise at MIC_H timer							
Byte50 Byte53	SSB reported count (Comprehensive value)							
Byte54 Byte57	Link Failure supervised timer SVP timer							
Byte58 Byte5B	Link Failure supervised timer (0.96μsec/count)							
Byte5C Byte5F	SSB: B65A reported count							
Byte60 Byte63	SSB: B65C reported count							
Byte64 Byte67	SSB: B65D reported count							
Byte68 Byte6B	SSB: B65E reported count							
Byte6C Byte6F	SSB: B660 reported count							
Byte70 Byte73	SSB: B661 reported count							
Byte74 Byte77	SSB: B668 reported count							
Byte78 Byte7B	SSB: B66A reported count							
Byte7C Byte7F	SSB: DDA1 reported count							

(*48) SIM = 2193 is valid

	0	1	2	3	4	5	6	7
Byte40 Byte43	0x0000B6AF (Related SSB Code)							
Byte44 Byte47	SIM type + Port#							
Byte48 Byte4B	Loss of Signal Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte4C Byte4F	Bad Received Character Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte50 Byte53	Loss of Sync Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte54 Byte57	Link Failure Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte58 Byte5B	Discarded Frame Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte5C Byte5F	Received _EOFa Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte60 Byte63	BAD_CRC Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte64 Byte67	OLS/NOS Received Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte68 Byte6B	LIPf Received Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte6C Byte6F	Bad_ALPA Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte70 Byte73	Link Down detected Counter (Cumulative value for 30 min to before the reporting SIM)							
Byte74 Byte77	none							
Byte78 Byte7B	none							
Byte7C Byte7F	none							

(*49) Numbers of pair status changes

- x'0': From Simplex to Duplex Pending
- x'1': From Simplex to Duplex
- x'2': From Duplex Pending to Duplex
- x'3': From Duplex Pending to Suspend
- x'4': From Duplex to Suspend
- x'5': From Duplex to Simplex
- x'6': From Duplex Pending to Simplex
- x'7': From Suspend to Simplex
- x'8': From Suspend to Duplex Pending
- x'9': From Hold to Duplex
- x'A': From Hold to Duplex Pending
- x'B': From Hold to Simplex
- x'C': From Simplex to Suspend
- x'D': From Simplex to Hold
- x'E': From Suspend to Hold
- x'F': From Duplex to Duplex Pending

(*50) Numbers of pair status changes

- x'0': A request for suspension was received.
- x'1': A suspension transaction was completed.
- x'2': An instruction to delete a pair was received in the Suspend status.
- x'3': An instruction to delete a pair was received in the Duplex Pending status.
- x'4': An instruction to delete a pair was received in the Duplex status.
- x'5': A pair deletion was completed.

(*51) The DKC emulation type determines whether the SIM will be reported to the host, as explained below;

- DKC emulation type is 2105 or 2107
You can select the SIM report to the HOST by SYSTEM OPTION.
MODE308 = OFF (Default) : Not Report to the HOST
MODE308 = ON : Report to the HOST
(However, '*17' is higher priority than '*51')
- Others
It is decided by setting '*17'.

(*52) Contact T.S.D with dump collected by Auto Dump in type "Detail".

(*53) Concerned SIM when abnormality occurs in CACHE P/K when the SM P/K exchange recovers, It is output SIM. When SIM is output, CACHE P/K Basic and Option P/K's (At the time of mounting) of same CL as failing SM P/K replacements are executed. The replacement of SM P/K that fails again is executed when succeeding. After the replacement of CACHE P/K is executed in another service parts, the replacement of SM P/K is executed when failing in the replacement of CACHE P/K.

(*54) Error occurred in normal processing.

(*55) Error occurred in interrupting.

(*56) You can suppress reporting the SIM to the optional operation. Default is “not report”
(When it is chosen optional operation once, it is not changed till the setting sets it again).

(*57) Refer to [TRBL29-10](#) when XX = 01 or XX = 02.

(*58) The following information of SIM = 21D4, 21D5, EFD4 is valid.

	0	1	2	3	4	5	6	7
byte40 byte41	Port number (Eg. CL1-A=0, CL1-B=1)							
byte42 byte43	LDEV number (lower 2 bytes)							
byte44 ~ byte47	VDEV number							
byte48 ~ byte4F	Forehand WWN of External Storage connection							
byte50 ~ byte5B	Product Number of External Storage							
byte5C ~ byte5E	Vendor Name							
byte5F	Reserved							
byte60 ~ byte63	Path number on the management of VDEV							
byte64	Reserved							
byte65 ~ byte67	LINK ADR (Tool input value)							
byte68 ~ byte6B	LDEV number							
byte70 ~ byte7F	Reserved							

(*59) FICON DM is contained

(*60) In the case of FICON DM, host report is not performed.

- (*61) You should execute recovery operations at time zone with a little business influence, because the multiple replacement will be needed according to the ACC of SIM.
- (*62) This SIM is output in the UR×UR multitarget configuration when two or more mirrors in the primary site are Active, and the metadata utilization and the journal data utilization are 60% to 79%.

2.2 SIM Reference Codes Detected by the SVP

Error			REF code			SIM 28	Level of error	Host report	Remarks
			22	23	13				
Environmental error	Temperature Abnormal Alarm	Back of cabinet Left Side (TH-1 detect)	BF	10	10	F1	Moderate	Yes	
		Back of cabinet Right Side (TH-2 detect)	BF	10	11	F1	Moderate	Yes	
	Temperature Abnormal Warning	Back of cabinet Left Side (TH-1 detect)	BF	12	10	F1	Moderate	Yes	
		Back of cabinet Right Side (TH-2 detect)	BF	12	11	F1	Moderate	Yes	
	Voltage alarm (LOGIC)	Cluster-1	BF	20	10	F1	Moderate	Yes	
		Cluster-2	BF	20	11	F1	Moderate	Yes	
	Voltage alarm (MEMORY)	Cluster-1	BF	21	10	F1	Moderate	Yes	
		Cluster-2	BF	21	11	F1	Moderate	Yes	
	ACDC alarm		BF	22	XX (*2)	F1	Moderate	Yes	
	P/S warning	PS-11	BF	40	10	F1	Moderate	Yes	Please refer to a trouble shooting section at the time of the obstacle outbreak.
		PS-21	BF	40	11	F1	Moderate	Yes	
		PS-12	BF	41	10	F1	Moderate	Yes	
		PS-22	BF	41	11	F1	Moderate	Yes	
		PS Warning	BF	30	XX (*1)	F1	Moderate	Yes	
	HDD-PL Voltage fall	12V Voltage fall	BF	36	XX (*2)	F1	Moderate	Yes	
	LEDPNL error		BF	38	XX (*3)	F1	Moderate	Yes	
	LEDPNL ON error		BF	3A	XX (*2)	F1	Moderate	Yes	
	Battery warning	BATTERY-11	BF	50	10	F1	Moderate	Yes	
		BATTERY-21	BF	50	11	F1	Moderate	Yes	
		BATTERY-12	BF	51	10	F1	Moderate	Yes	
		BATTERY-22	BF	51	11	F1	Moderate	Yes	
		BATTERY-SB1	BF	55	10	F1	Moderate	Yes	
		BATTERY-SB2	BF	55	11	F1	Moderate	Yes	
	Fan abnormality	FAN-11	BF	70	10	F1	Moderate	Yes	
		FAN-12	BF	70	11	F1	Moderate	Yes	
		FAN-21	BF	72	10	F1	Moderate	Yes	
		FAN-22	BF	72	11	F1	Moderate	Yes	
		SBFAN	BF	7C	10	F1	Moderate	Yes	

Error			REF code			SIM 28	Level of error	Host report	Remarks
			22	23	13				
Environmental error	JP remains	PS ON JP	BF	82	A3	F1	Moderate	Yes	
		SVP PS ON/OFF (SVP-BASIC)	BF	85	A3	F1	Moderate	Yes	
		SVP PS ON/OFF (SVP-OPTION)	BF	86	A3	F1	Moderate	Yes	
	Environment monitor error (Access error)	SSVP/MN (DKCMN1 detect)	BF	90	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	90	A1	F1	Moderate	No	
	CEINH Register error	SSVP/MN (DKCMN1 detect)	BF	93	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	93	A1	F1	Moderate	No	
	FSW Access error		BF	94	XX (*5)	F1	Moderate	No	
	PS ON error		BF	98	XX (*5)	F1	Moderate	No	
	Environment monitor PCB error	DKCMN1 Ready Off	BF	9A	A0	F1	Moderate	No	
		DKCMN2 Ready Off	BF	9A	A1	F1	Moderate	No	
	Alarm disagreement	SSVP/MN (DKCMN1 detect)	BF	A0	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A0	A1	F1	Moderate	No	
	P/S On disagreement	SSVP/MN (DKCMN1 detect)	BF	A1	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A1	A1	F1	Moderate	No	
	P/S Off disagreement	SSVP/MN (DKCMN1 detect)	BF	A2	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A2	A1	F1	Moderate	No	
	EPO disagreement	SSVP/MN (DKCMN1 detect)	BF	A3	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A3	A1	F1	Moderate	No	
	Battery output disagreement	SSVP/MN (DKCMN1 detect)	BF	A4	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A4	A1	F1	Moderate	No	
	DESTEND disagreement	SSVP/MN (DKCMN1 detect)	BF	A8	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A8	A1	F1	Moderate	No	

Error			REF code			SIM 28	Level of error	Host report	Remarks
			22	23	13				
Environmental error	BatteryMode disagreement	SSVP/MN (DKCMN1 detect)	BF	A9	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	A9	A1	F1	Moderate	No	
	MODELID disagreement	SSVP/MN (DKCMN1 detect)	BF	AA	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	AA	A1	F1	Moderate	No	
	UNICODE disagreement	SSVP/MN (DKCMN1 detect)	BF	AB	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	AB	A1	F1	Moderate	No	
	AUTOPWRON disagreement	SSVP/MN (DKCMN1 detect)	BF	AC	A0	F1	Moderate	No	
		SSVP/MN (DKCMN2 detect)	BF	AC	A1	F1	Moderate	No	
	P/K Data disagreement	FSW	BF	BC	XX (*2)	F1	Moderate	No	
		DKA	BF	BE	XX (*2)	F1	Moderate	No	
	Duplex SVP Setup fail		BF	E3	A2	F1	Moderate	Yes	
	SVP FAN1 Error		BF	E4	00	F1	Moderate	No	
	SVP FAN2 Error		BF	E4	01	F1	Moderate	No	
	SVP Temperature Error		BF	E4	03	F1	Moderate	No	
	HDD Error (SMART)		BF	E4	04	F1	Moderate	No	
	PS P/L-DKCPNL between Cable		BF	F2	A0	F1	Moderate	No	
	DKCBOX-SBBOX between Cable		BF	F3	A0	F1	Moderate	No	

Error			REF code			SIM 28	Level of error	Host report	Remarks
			22	23	13				
SVP failure	Logical inconsistency		70	XX (*4)	00	F1	Moderate	No	
	HEAP error		71	XX (*4)	00	F1	Moderate	No	
	File error		72	XX (*4)	00	F1	Moderate	No	
	LAN error		73	XX (*4)	00	F1	Moderate	No	
	S-SVP error		74	XX (*5)	XX (*5)	F1	Moderate	Yes	
	Windows error		75	XX (*4)	00	F1	Moderate	No	
	CUDG3 detected error	CHA	76	00	XY (*7)	F1	Moderate	No	
		DKA	76	01	XY (*8)	F1	Moderate	No	
		Shared Memory	76	02	00	F1	Moderate	No	
		CSW	76	03	00	F1	Moderate	No	
		CACHE	76	04	00	F1	Moderate	No	
	LCDG3 detected error	CHA	76	10	XY (*7)	F1	Moderate	No	
	BOOT detected error (CHA)		79	00	XY (*7)	F1	Moderate	No	(*11)
	BOOT detected error (DKA)		79	01	XY (*8)	F1	Moderate	No	(*11)
	ISDN Router failure		7B	00	03	F1	Moderate	Yes	
End status of remote microprogram exchange	Normal end		7A	00	00	F1	Service	No	
	Abnormal end (SVP)		7A	01	00	F1	Service	No	
	Abnormal end (MP)		7A	02	00	F1	Service	No	
	Version check error		7A	03	XX (*6)	F1	Service	No	
	Sum check error		7A	04	XX (*6)	F1	Service	No	
	LCP patch error		7A	05	XY (*9)	F1	Service	No	
	Warning (Configuration inconsistency)		7A	10	00	F1	Service	No	
	Warning (S-SVP busy)		7A	11	00	F1	Service	No	
	Warning (LCP busy)		7A	12	XY (*9)	F1	Service	No	
	Internet download error		7A	20	00	F1	Service	No	
	Discontinuation by the user		7A	23	00	F1	Service	No	
Reboot Stop	SVP reboot stop (FD Inserted)		7C	00	00	F1	Moderate	No	
Battery Check	Battery life is over		7C	01	00	F1	Moderate	No	
Log output failure	AuditLog failure of Host instruction configuration change		7C	02	00	F1	Moderate	No	
Audit Log	Audit Log FTP Transfer failed		7C	03	00	F1	Moderate	Yes	

Error			REF code			SIM	Level of error	Host report	Remarks
			22	23	13				
Situation Observation Error	Cache Write Pending Ratio Error		7E	00	XX	F2	Moderate	No	XX: CLPR#
	Cache MCU Side File Use Ratio Error		7E	02	XX	F2	Moderate	No	XX: CLPR#
	Cache Async MCU Side File Use Ratio Excess		7E	03	XX	F2	Moderate	No	XX: CLPR#
	Cache Use Ratio Error		7E	05	XX	F2	Moderate	No	XX: CLPR#
	Cache Async RCU Side File Use Ratio Excess		7E	06	XX	F2	Moderate	No	XX: CLPR#
	MP Operating Ratio Error	CHA	7E	10	XY(*7)	F1	Moderate	No	
		DKA	7E	11	XY(*8)	F1	Moderate	No	
	Loss Of Signal Count Excess		7E	20	XY(*10)	F1	Moderate	No	
	Bad Received Character Count Excess		7E	21	XY(*10)	F1	Moderate	No	
	Loss Of Synchronization Count Excess		7E	22	XY(*10)	F1	Moderate	No	
	Link Failure Count Excess		7E	23	XY(*10)	F1	Moderate	No	
	Received EOFa Count Excess		7E	24	XY(*10)	F1	Moderate	No	
	Discarded Frame Count Excess		7E	25	XY(*10)	F1	Moderate	No	
	Bad CRC Count Excess		7E	26	XY(*10)	F1	Moderate	No	
	Protocol Error Count Excess		7E	27	XY(*10)	F1	Moderate	No	
	Invalidity Frame Count Excess		7E	28	XY(*10)	F1	Moderate	No	
	HTP Multiplicity Count Excess		7E	29	XY(*10)	F1	Moderate	No	
	HTP Interrupt Count Excess		7E	2A	XY(*10)	F1	Moderate	No	
	HTP Delay time Count Excess		7E	2B	XY(*10)	F1	Moderate	No	
	HTP Read Rate Count Excess		7E	2C	XY(*10)	F1	Moderate	No	
	HTP Write Rate Count Excess		7E	2D	XY(*10)	F1	Moderate	No	
	HTP Work Ratio Count Excess		7E	2E	XY(*10)	F1	Moderate	No	
	Read Hit Ratio Excess		7E	30	00	F1	Moderate	No	

Error		REF code			SIM 28	Level of error	Host report	Remarks
		22	23	13				
On-demand	Cache	7F	F0	02	F1	Service	No (*a)	
	LUN	7F	F0	03	F1	Service	No (*a)	
Pair Failure SIM Reduce	HRC/HORC/HAM	7F	F1	00	F1	Service	No	
	HRCA/HORCA	7F	F1	01	F1	Service	No	
	MRCF/OMRCF	7F	F1	02	F1	Service	No	
	HUR	7F	F1	03	F1	Service	No	
	COW	7F	F1	04	F1	Service	No	
	FC v2	7F	F1	05	F1	Service	No	
Dual SVP	Standby SVP fail	7F	F2	XX	F1	Moderate	No	(*13)
	SVP fail over	7F	F3	XX	F1	Moderate	No	(*13)
Virus detected	Clean virus from file	7F	F4	XX	F1	Service	Yes	(*13)
	Quarantine infected file	7F	F5	XX	F1	Moderate	Yes	(*13)
	Leave alone	7F	F6	XX	F1	Serious	Yes	(*13)
SVP failure License key	The term of validity is over	7F	F7	XX	F1	Serious	Yes	(*12)
	The capacity of validity is over	7F	F8	XX	F1	Serious	Yes	(*12)
Dump received	WCHK1 dump (CHA)	30	80	XY (*7)	F1	Moderate	No	
	WCHK1 dump (DKA)	31	80	XY (*8)	F1	Moderate	No	
	ABEND dump (CHA)	30	81	XY (*7)	F1	Moderate	No	
	ABEND dump (DKA)	31	81	XY (*8)	F1	Moderate	No	
Processor error	CHA PCB Blockade	30	A0	XX (*14)	F1	Acute	Yes	
	DKA PCB Blockade	31	A0	00	F1	Acute	Yes	
	DKC Blockade	30	A1	00	F1	Acute	Yes	

(*a) This SIM is automatically completed after automatic report completion.

(*1) Error Section (DKU part)

Byte 13	Error Section
b0	DKUPS-000
b1	DKUPS-001
b2	DKUPS-010
b3	DKUPS-011
b4	DKUPS-020
b5	DKUPS-021
b6	DKUPS-030
b7	DKUPS-031
c0	DKUPS-100
c1	DKUPS-101
c2	DKUPS-110
c3	DKUPS-111
c4	DKUPS-120
c5	DKUPS-121
c6	DKUPS-130
c7	DKUPS-131
d0	DKUPS-200
d1	DKUPS-201
d2	DKUPS-210
d3	DKUPS-211
d4	DKUPS-220
d5	DKUPS-221
d6	DKUPS-230
d7	DKUPS-231
e0	DKUPS-300
e1	DKUPS-301
e2	DKUPS-310
e3	DKUPS-311
e4	DKUPS-320
e5	DKUPS-321
e6	DKUPS-330
e7	DKUPS-331

(*2) Error Section (DKU part)

Byte 13	Error Section
b0	FSW001-L
b1	FSW001-U
b2	FSW023-L
b3	FSW023-U
c0	FSW101-L
c1	FSW101-U
c2	FSW123-L
c3	FSW123-U
d0	FSW201-L
d1	FSW201-U
d2	FSW223-L
d3	FSW223-U
e0	FSW301-L
e1	FSW301-U
e2	FSW323-L
e3	FSW323-U

(*3) Error Section (DKU part)

Byte 13	Error Section
b0	LEDPNL00-R
b1	LEDPNL01-L
b2	LEDPNL02-R
b3	LEDPNL03-L
c0	LEDPNL10-R
c1	LEDPNL11-L
c2	LEDPNL12-R
c3	LEDPNL13-L
d0	LEDPNL20-R
d1	LEDPNL21-L
d2	LEDPNL22-R
d3	LEDPNL23-L
e0	LEDPNL30-R
e1	LEDPNL31-L
e2	LEDPNL32-R
e3	LEDPNL33-L

(*4) Contents of byte 23 when a logical error, a HEEP error, a file error, a LAN error or Windows error occurred

Byte 23	Content
0x00	Dump task
0x01	DKU inline
0x02	Microprogram change (online)
0x03	Information
0x04	LOGOUT
0x05	PATH inline
0x06	Back Ground
0x07	DIAG
0x08	Install
0x09	Online
0x0A	Microprogram change (offline)
0x0B	Special PCB maintenance
0x0C	Common communication function
0xFF	Other AP

(*5) Contents of byte 23 and byte 13 when a S-SVP logical error occurred

Byte23	Byte13	Content
00	01	SSVP ROM SUM Check error (Recovered)
00	02	SSVP RAM RD/WR Error (Recovered)
00	50	Software error (Parameter Error)
10	60	Recovering SVP Communication
10	FF	SSVP Failure detected by SVP
50	01	Environment Monitor Register RD/WR error

(*6) Contents of byte 13 when a version check error or sum check error occurred

Byte 13	Micro-program type
00	RAM BOOT
01	DKC MANI
02	LCP
03	MCP
04	LCDG
05	DKU
06	SVP
07	S-SVP
08	CUDG4
09	FCP
10	FOP
20	MAIN DIFF
40	CONFIG
50	HTP
60	FCDG
70	PCDG
80	ROMBOOT

(*7) Contents of byte 13 when a CHP error occurred.

CHA PCB#: High 5Bit (x'00' ~ x'1F') shows CHA PCB#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ High 5Bit shows DKA/CHA PCB#.

Content of high 5bit of Byte 13(X)

Byte 13(high 5bit)	Content	Byte 13(high 5bit)	Content
0x00	1st. CHA of cluster 1	0x10	1st. CHA of cluster 2
0x01	2nd. CHA of cluster 1	0x11	2nd. CHA of cluster 2

PCB MP#: Low 3Bit (x'0' ~ x'3') shows PCB MP#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ Low 3Bit shows PCB MP#.

Content of low 3bit of Byte 13(Y)

Byte 13(Low 3bit)	Content
0x0	1st. CHP of the CHA
0x1	2nd. CHP of the CHA
0x2	3rd. CHP of the CHA
0x3	4th. CHP of the CHA

In WCHK1 dump and ABEND dump received SIM = 3080XY, 3081XY, the system error code is indicated on the SIM log detail screen in the format [YYYY] as in Reference Code 3080XY[YYYY].

(*8) Contents of byte 13 when a DKP error occurred.

CHA PCB#: High 5Bit (x'00' ~ x'1F') shows CHA PCB#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ High 5Bit shows DKA/CHA PCB#.

Content of high 5bit of Byte 13(X)

Byte 13(high 5bit)	Content
0x0	1st. DKA of cluster 1
0x1	2nd. DKA of cluster 1
0x8	1st. DKA of cluster 2
0x9	2nd. DKA of cluster 2

PCB MP#: Low 3Bit (x'0' ~ x'3') shows PCB MP#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ Low 3Bit shows PCB MP#.

Content of low 3biys of Byte 13(Y)

Byte 13(Low 3bit)	Content
0x0	1st. DKP of the DKA
0x1	2nd. DKP of the DKA
0x2	3rd. DKP of the DKA
0x3	4th. DKP of the DKA

In WCHK1 dump and ABEND dump received SIM = 3180XY, 3181XY, the system error code is indicated on the SIM log detail screen in the format [YYYY] as in Reference Code 3180XY[YYYY].

(*9) Contents of Byte 13 when a LCP error occurred

CHA PCB#: High 5Bit (x'00' ~ x'1F') shows CHA PCB#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ High 5Bit shows DKA/CHA PCB#.

Content of high 5bit of Byte 13(X)

Byte 13(high 5bit)	Content	Byte 13(high 5bit)	Content
0x00	1st. CHA of cluster 1	0x10	1st. CHA of cluster 2
0x01	2nd. CHA of cluster 1	0x11	2nd. CHA of cluster 2

PCB MP#: Low 3Bit (x'0' ~ x'3') shows PCB MP#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ Low 3Bit shows PCB MP#.

Content of low 3biys of Byte 13(Y)

Byte 13(Low 3bit)	Content
0x0	1st. LCP of the CHA
0x1	2nd. LCP of the CHA
0x2	3rd. LCP of the CHA
0x3	4th. LCP of the CHA
0x4	5th. LCP of the CHA
0x5	6th. LCP of the CHA
0x6	7th. LCP of the CHA
0x7	8th. LCP of the CHA

(*10) Contents of Byte 13 when a Port error occurred

CHA PCB#: High 5Bit (x'00' ~ x'1F') shows CHA PCB#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ High 5Bit shows DKA/CHA PCB#.

Content of high 5bit of Byte 13(X)

Byte 13(high 5bit)	Content	Byte 13(high 5bit)	Content
0x00	1st. CHA of cluster 1	0x10	1st. CHA of cluster 2
0x01	2nd. CHA of cluster 1	0x11	2nd. CHA of cluster 2

PCB MP#: Low 3Bit (x'0' ~ x'3') shows PCB MP#.

Bit#	7	6	5	4	3	2	1	0
------	---	---	---	---	---	---	---	---

↑ Low 3Bit shows PCB MP#.

Content of low 3biys of Byte 13(Y)

Byte 13(Low 3bit)	Content
0x0	1st. Port of the CHA
0x1	2nd. Port of the CHA
0x2	3rd. Port of the CHA
0x3	4th. Port of the CHA
0x4	5th. Port of the CHA
0x5	6th. Port of the CHA
0x6	7th. Port of the CHA
0x7	8th. Port of the CHA

(*11) Execute the following procedures according to the error code of initialization function which is shown in 5C-5Fth byte of the SSB with error code 3309. Also, the SSB is the relative log of SIM with the reference code 7900xx or 7901xx.

Code (4-bytes)	Procedures	Note
41000021	P/K Replace	Replace the package with another new one.
41000031	MP-Install	Execute it when the P/S OFF is executed with Shut Down Jumpers to install the micro-programs.
	① P/S OFF ② Pull out the Shut Down Jumpers ③ P/S ON	Execute them when you have forgotten to pull out Shut Down Jumpers in the normal P/S ON.
41000042	① MP-Install ② P/K Replace (Note 2)	Use the same package in ②.
41000048	(Note 1)	
41000055	P/K Replace	Replace the package with another new one.
41000056	① SVP Replace ② MP-Install ③ P/K Replace	Use the same package in ③.
others	① MP-Install ② P/K Replace	Use the same package in ②.

Never fail to make sure the installed micro program version and the each processor's status by displaying the status (Status display) after the above procedures is finished.

Then, for the micro program version, "Major Version" and "MP Each Version" must be confirmed.

Reference address are as follows.

P/K Replace	REP01-280 ~ 290
SVP Replace	REP01-300 (Work ID : RTC7)
MP-Install	MICRO05-10
SSB with the error code 3309	SSBLOG05-1800

Note 1: ① Confirm the PCB name of the package that is set now.

- ② • In the case that the package is the same as the type of the package which you specified in the define configuration:
 - (a) MP-Install
 - (b) P/K Replace (Use the same package)
- In the case that the package is not same as the type of the package that you specified in the define configuration information:
 - (a) MP-Install

Note 2: If this error has occurred in P/S ON process of DKC in the condition that is described below, execute not P/K Replace but P/S OFF and ON after MP Install.

- Instantaneous down without P/S OFF immediately after Non Stop SCSI Host micro-program exchange and SM is volatile.
- DKC in not Ready.
- Power Event Log (PWE) is not reported from any MP.
- SIM 7900 is reported from all CHT PCBs.

- (*12) Contents of Byte13 of an SVP failure license key refer to the following lists.
 Confirm the Program Product Installation status (Capacity, a period) at the [License Key] screen of Storage Navigator.

Byte13	PP name (HDS)	PP name (HP)
0x00	TrueCopy for z/OS®	TrueCopy for Mainframe
0x01	TrueCopy Asynchronous for z/OS®	TrueCopy Asynchronous for Mainframe
0x02	Compatible XRC	Compatible XRC
0x03	TrueCopy	HP XP Continuous Access Synchronous
0x04	TrueCopy Asynchronous	HP XP Continuous Access Asynchronous
0x05	ShadowImage for z/OS®	ShadowImage for Mainframe
0x06	Compatible FlashCopy®	Compatible FlashCopy®
0x07	Compatible FlashCopy® V2	Compatible FlashCopy® V2
0x08	ShadowImage	HP XP Business Copy
0x09	Universal Replicator for z/OS®	Universal Replicator for Mainframe
0x0A	Universal Replicator	HP XP Continuous Access Journal
0x0B	Universal Volume Manager	HP XP External Storage
0x0D	Virtual LVI	Virtual LVI for Mainframe
0x0E	Open Volume Management	Open Volume Management
0x0F	Volume Security	Volume Security for Mainframe
0x10	Volume Security Port Option	Volume Security Port Security Opt. for Mainframe
0x11	Volume Retention Manager	Volume Retention Manager for Mainframe
0x12	Data Retention Utility	Data Retention Utility
0x13	LUN Manager	LUN Manager
0x14	Cache Residency Manager for z/OS®	Cache Residency Manager for Mainframe
0x15	Cache Residency Manager	Cache Residency Manager
0x16	Performance Monitor	Performance Monitor
0x17	Volume Migration	HP XP Auto LUN
0x18	Server Priority Manager	HP XP Performance Control
0x19	Compatible PAV	Parallel Access Volume
0x1A	Database Validator	Database Validator
0x1B	Storage Navigator	Remote Web Console
0x1C	SNMP Agent	SNMP API
0x1D	JAVA API	JAVA API
0x20	Configuration File Loader	-
0x21	Virtual Partition Manager	HP XP Disk/Cache Partition
0x22	Volume Shredder	Volume Shredder
0x23	Volume Migration V2	Auto LUN V2
0x24	Copy-on-Write Snapshot	HP XP Snapshot
0x26	Dynamic Provisioning	HP XP Thin Provisioning

Byte13	PP name (HDS)	PP name (HP)
0x27	TrueCopy Sync and full function HUR with 3DC and 4x4	Cont Access Journal / UR 3DC & 4x4
0x28	Compatible Hyper PAV	Hyper Parallel Access Volume
0x29	FICON® Data Migration	FICON® Data Migration
0x2A	Encryption License Key	DKA Encryption License Key
0x2B	High Availability Manager	HP XP External Storage Access Manager

(*13) REF CODE 13XX

00 : Basic SVP

01 : Option SVP

(*14) Error Section

Byte 13	Error Section
00	Fibre
01	MFibre
02	Serial
FF	All CHA

3. SIM Format

SIM Format (DKC SIM SSB28 = x'F1')

	0	1	2	3	4	5	6	7
0	x'00'							
1	Permanent Error	'0'		'1'	x'0'			
2	'0'			'1'	x'0'			
3	x'000000'							
4								
5								
6	Serial # valid	Device address valid	Track address valid	'0'	Format (x'F')			
7	SIM sense record ID (x'E0')							
8	Range subject to the error (*1)				Range affected by repair (*2)			
9	Level of error (*3)		Number of faulty SPs (*4)	Number of SPs in SSID (*5)	Number of faulty SSIDs (*6)	Number of affected SSIDs (*7)	Status (*8)	0
10	Resend SIM (*9)	('0000000')						
11	Hardware level (*10)							
12	Hardware level (*10)							
13	Isolation code (*11)							
14	SSB ID (*12)	SIM sequence number (SIM log record #)						SVP ID (*13)
15	DKC serial number (x'0CC5'+DKC sequence number)							
16								
17								
18								
19								
20	SSID of self subsystem							
21	Symptom code (*14)							
22								
23								
24	Logging and Message Control (*15)							
25	Program action code (x'10')							
26	Dual Frame	EDCC Mode	'00'		Asynchronous operation	Serial channel	Report output (1)	'0'
27	'0'	'0000'					Extension path configuration	Fenced storage path
28	x'F1'							
29	Affected SSID							
30								
31	x'00'							

SIM Format (CACHE SIM SSB28 = x'F2')

	0	1	2	3	4	5	6	7
0	x‘00’							
1	Permanent Error	‘0’		‘1’	x‘0’			
2		‘0’		‘1’	x‘0’			
3		x‘000000’						
4								
5								
6	Serial # valid	Device address valid	Track address valid	‘0’	Format (x‘F’)			
7	SIM sense record ID (x‘E0’)							
8	Range subject to the error (*1)				Range affected by repair (*2)			
9	Level of error (*3)		Number of faulty SPs (*4)	Number of SPs in SSID (*5)	Number of faulty SSIDs (*6)	Number of affected SSIDs (*7)	Status (*8)	0
10	Resend SIM (*9)	(‘0000000’)						
11	Hardware level (*10)							
12	Hardware level (*10)							
13	Isolation code (*11)							
14	SSB ID (*12)	SIM sequence number (SIM log record #)						SVP ID (*13)
15	DKC serial number (x‘0CC5’+DKC sequence number)							
16								
17								
18								
19								
20	SSID of self subsystem							
21	Symptom code (*14)							
22								
23								
24	Logging and Message Control (*15)							
25	Program action code (x‘10’)							
26	Dual Frame	EDCC Mode	‘00’		Asynchronous operation	Serial channel	Report output	‘0’
27	‘0’	‘0000’				Extension path configuration	Fenced storage path	
28	x‘F2’							
29	Affected SSID							
30								
31	x‘00’							

SIM Format (DEVICE SIM SSB28 = x'FE')

	0	1	2	3	4	5	6	7
0	x'0000'							
1								
2	Storage Control Type (x'06')							
3	x'00'							
4	Affected SP		Device Address					
5	Device Type							
6	Serial # valid	Device address valid	Track address valid	'0'	Format (x'F')			
7	SSB ID (*12)	SIM Sequence ID					SVP ID (*13)	
8	Device Exception (x'1')				Service Message (*16)			
9	Level of error (*3)		'000000'					
10	Resend SIM (*9)	('0000000')						
11	Exception Class Fru List Code (x'80')							
12	Hardware and Microcode Corequisite Indicator (x'01')							
13	Device Address (See reference code)							
14	Action Flag (x'05')							
15	Drive serial number (x'0CC5'+DKU sequence number)							
16								
17								
18								
19								
20	SSID of self subsystem							
21								
22	Symptom code (*14)							
23								
24	Logging & Message Control (*15)							
25	Program Action Code (x'10')							
26	Dual Frame	EDCC Mode	x'0'	x'0'	Asynchro- nous operation	Serial Channel	'1'	'0'
27	x'0'				x'0'	Extension path configu- ration	Storage path	
28	x'FE'							
29	x'000000'							
30								
31								

SIM Format (MEDIA SIM SSB28 = x'FF')

	0	1	2	3	4	5	6	7
0	x'0000'							
1								
2	Storage Control Type (x'06')							
3	x'00'							
4	Affected SP		Device Address					
5	Device Type							
6	Serial # valid	Device address valid	Track address valid	'0'	Format (x'F')			
7	SSB ID (*12)	SIM Sequence ID						SVP ID (*13)
8	Device Exception (x'1')				Service Message (x'1')			
9	Level of error (*3)		Media Maintenance Procedure Number (correctable: x'07', uncorrectable: x'05')					
10	Resend SIM (*9)	('0000000')						
11	Exception Class Fru List Code (x'80')							
12	Hardware and Microcode Corequisite Indicator (x'01')							
13	Device Address (See reference code)							
14	Correctable: x'87', uncorrectable: x'85'							
15	Drive serial number (x'0CC5'+DKU sequence number)							
16								
17								
18								
19								
20	SSID of self subsystem							
21								
22	Symptom code (*14)							
23								
24	Logging & Message Control (*15)							
25	Program Action Code (x'10')							
26	Dual Frame	EDCC Mode	x'0'	x'0'	Asynchro- nous operation	Serial Channel	'1'	'0'
27	x'0'				x'0'	Extension path configu- ration	Storage path	
28	x'FF'							
29	Cylinder Address High							
30	Cylinder Address Low							
31	Head Address							

(*1) Range subject to the error

① When byte 28 is x'F1' (DKC SIM)

x'0': Not used
 x'1': Error range not known
 x'2': SP error
 x'3': CHL-I error
 x'4': Not affect performance
 x'5' to x'F': Not used

② When byte 28 is x'F2' (CACHE SIM)

x'0': Not used
 x'1': Error range not known
 x'2': Error between SP and CACHE
 x'3': CACHE error
 x'4': DC/FW error
 x'5': FW error
 x'6' to x'F': Not used

(*2) Range affected by repair

① When byte 28 is x'F1' (DKC SIM)

x'0': Not used
 x'1': Repair range not known
 x'2': Repair does not affect performance
 x'3': SP disabled during repair
 x'4': SSID disabled during repair
 x'5' to x'F': Not used

② When byte 28 is x'F2' (CACHE SIM)

x'0': Not used
 x'1': Repair range not known
 x'2': Repair does not affect performance
 x'3': CACHE error
 x'4': DC/FW error
 x'5': FW error
 x'6' to x'F': Not used

(*3) Level of error

B'00': Service SIM
 B'01': Moderate SIM
 B'10': Serious SIM
 B'11': Acute SIM

(*4) Number of faulty SPs

B'0': 1 SP
 B'1': 2 SPs

(*5) Number of SPs in SSID

B'0': 2 SPs
 B'1': 4 SPs

(*6) Number of faulty SSIDs

B'0': 1
 B'1': 2

(*7) Number of affected SSIDs

B'0': 1
 B'1': 2

(*8) Status

B'0': Degeneration
B'1': Stop

(*9) Resend SIM

B'0': Not resend SIM
B'1': Resend SIM

(*10) Hardware level

Bit 0: ESCON hardware level

[When bit 0 is 0]

Bit 1: Not used
Bits 2-3: Report storage path
Bits 4-5: Number of channels per cluster
B'00' = 4
B'01' = 8
B'10' = Not used
B'11' = Not used
Bit 6: NVS
B'0' = No NVS
B'1' = NVS provided
Bit 7: Not used
Bits 8-10: Cache size
000: Non cache
001: 256MB
010: 512MB
011: 768MB
100: 1024MB
101: 1280MB
110: 1536MB
111: Over 1536MB
Bits 11-13: Cluster hardware level
Bits 14-15: Cache/NVS hardware level

[When bit 0 is 1]

Bit 1: Not used
Bits 2-3: Error storage path
Bits 4-7: Number of channels per cluster
0000: Metal = 4, ESCON = 0
0001: Metal = 8, ESCON = 0
0010: Metal = 4, ESCON = 2
0100: Metal = 4, ESCON = 4
0110: Metal = 0, ESCON = 2
1000: Metal = 0, ESCON = 4
1010: Metal = 0, ESCON = 8
1100: Metal = 0, ESCON = 6
Bit 8: Dual frame
0: Dual frame
1: Modular power
Bits 9-11: Cache size
000: Non cache
001: 256MB
010: 512MB
011: 768MB
100: 1024MB
101: 1280MB
110: 1536MB
111: Over 1536MB
Bits 12-13: Cluster hardware level
Bits 14-15: Cache/NVS hardware level

(*11) Isolation code

Byte 13 ≠ X'00' Bytes 22 and 23 are a symptom code.
Byte 13 = X'00' Bytes 22 and 23 are an isolation code. This byte is byte 2 of the association code.

(*12) SSB ID

B'0' = SVP

B'1' = SP

(*13) SVP ID

B'0' = SVP1

B'1' = SVP2

(*14) Symptom code

See bytes 22 and 23 of the reference codes listed in Sections 2.1 and 2.2.

(*15) Logging and Message control

Bit 0 - 3: Not used

Bit 4 - 5: Logging

B'00': Do not log

B'01': Unconditional log

B'10': Log only once

B'11': Log only if persistent

Bit 6 - 7: Operator message

B'00': No message

B'01': Unconditional message

B'10': Send only once

B'11': Send only if persistent

(*16) Service Message

x'1': Action

x'C': No action