

OPTIONS NODECK,LIST,XREF,NOREL,OBJ(P)

THE LIST OF OPTIONS USED DURING THIS ASSEMBLY IS-- NODECK,LIST,XREF,NOREL,OBJ

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	2
0000			1	#KRUNUM	START	0				
			2		PRINT	ON,NODATA				
			3	*	@SYS	EXP-N				
			214+		PRINT	ON				
			215	*	@FXD	EXP-N				
			620+		PRINT	ON				
			621	*	@CY0	EXP-N				
			694+		PRINT	ON				
			695	*	@WKA	EXP-N				
			765+		PRINT	ON				
			766	*	@VOL	EXP-N				
			804+		PRINT	ON				
			805	*	@SPF	EXP-N				
			1268+		PRINT	ON				
			1269	*	@CAN	EXP-N				
			1372+		PRINT	ON				
			1373	*	@ERM	EXP-N				
			1995+		PRINT	ON				
			1996	*	@HLT	EXP-N				
			2051+		PRINT	ON				

KRMOVE - REMOVE KEYWORD MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	23/12/23	PAGE	3
		2053		*****				
		2054	*	5703-XM1 COPYRIGHT IBM CORP. 1970				*
		2055	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083				*
		2056	*					*
		2057		*****				
		2058	*	STATUS				*
		2059	*	VERSION 1 MODIFICATION 0				*
		2060	*					*
		2061	*	FUNCTION				*
		2062	*	KRMOVE PERFORMS THE FUNCTION OF THE REMOVE KEYWORD. IT ALLOWS				*
		2063	*	THE USER TO COMMUNICATE TO THE SYSTEM THAT HE IS REMOVING ONE				*
		2064	*	OF THE REMOVABLE DISKS.				*
		2065	*					*
		2066	*	ENTRY POINTS				*
		2067	*	THE FIRST BYTE OF KRMOVE IS ITS ONLY ENTRY POINT.				*
		2068	*					*
		2069	*	INPUT				*
		2070	*	INPUT TO KRMOVE IS THE COMMAND IN THE INPUT LINE BUFFER AND THE				*
		2071	*	VOLUME LABEL (ON CYLINDER 0, SECTOR 2) OF THE DISK THAT IS BEING				*
		2072	*	REMOVED.				*
		2073	*					*
		2074	*	OUTPUT				*
		2075	*	NONE				*
		2076	*					*
		2077	*	EXTERNAL REFERENCES				*
		2078	*	THE FOLLOWING EXTERNAL REFERENCES ARE MADE IN KRMOVE:				*
		2079	*	* \$NUCBS - STARTING ADDRESS OF SYSTEM NUCLEUS				*
		2080	*	* \$XRSAB - REGISTER 2 (@XR) SAVE AREA				*
		2081	*	* \$CAERR - ERROR CODE SAVE AREA				*
		2082	*	* \$CAERK - EXIT TO LOAD THE ERROR PROGRAM (#ERRPG)				*
		2083	*	* \$DKSIZ - NUCLEUS INDICATOR FOR DISK CONFIGURATION				*
		2084	*	* \$VOLID - ADDRESS OF LEFT BYTE OF NUCLEUS VOLUME ID TABLE				*
		2085	*	* \$DISKN - ENTRY TO PERFORM PHYSICAL DISK OPERATION				*
		2086	*	* \$BSADR - SYSTEM PROGRAM FILE BASE ADDRESS				*
		2087	*	* \$FILIB - FILE LIBRARY DISK ADDRESS				*
		2088	*	* \$USRDR - DISPLACEMENT TO CURRENT USER DIRECTORY				*
		2089	*	* \$PASWD - ADDRESS OF EIGHT-BYTE PASSWORD				*
		2090	*	* \$INDR3 - NUCLEUS INDICATOR CONTAINING HARD HALT BIT INDR				*
		2091	*	* \$CAIPL - EXIT TO LOAD #GUFUD. SYSTEM IN KEYBOARD MODE				*
		2092	*	* SUTOBA - ENTRY TO MODULE TO CHECK WORKAREAS AND SYSTEM MODE				*
		2093	*	* SUTERR - ERROR EXIT FROM SUTOBA				*
		2094	*	* SUPDAT - ENTRY TO MODULE TO UPDATE DISK ERROR COUNTERS				*
		2095	*	* SCANIT - ENTRY TO DELIMITER SCAN MODULE				*
		2096	*	* SCAMMA - SCANIT INDICATOR SET TO ALLOW A COMMA				*
		2097	*					*
		2098	*	EXITS,NORMAL				*
		2099	*	NORMAL COMPLETION OF THE FUNCTION CAUSES EXIT TO THE FILE UPDATE				*
		2100	*	PROGRAM, #GUFUD, VIA \$CAIPL.				*
		2101	*					*
		2102	*	EXITS,ERROR				*
		2103	*	ANY ERROR CONDITION WILL CAUSE EXIT TO THE ERROR MESSAGE PROGRAM.				*
		2104	*	#ERRPG, VIA CAERK.				*
		2105	*					*
		2106	*	TABLES/WORKAREAS				*
		2107	*	* ONE SECTOR BUFFER REQUIRED TO HOLD THE DISK VOLUME LABEL.				*
		2108	*	* ONE SECTOR BUFFER REQUIRED FOR SUPDAT.				*

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		2109	*					*
		2110	*	*ATTRIBUTES				*
		2111	*	RELOCATABLE				*
		2112	*					*
		2113	*	*CHARACTER CODE DEPENDENCY				*
		2114	*	NONE				*
		2115	*					*
		2116	*	*NOTES				*
		2117	*	ERROR PROCEDURES				*
		2118	*	* KRMOVE WILL EXIT TO \$CAERK TO LOAD THE ERROR PROGRAM WHEN AN				*
		2119	*	ERROR IS DETECTED. THE APPROPRIATE ERROR CODE IS SET IN				*
		2120	*	\$CAERR. IF THE ERROR IS A SYNTAX ERROR, @XR POINTS TO THE				*
		2121	*	INVALID CHARACTER; FOR NON-SYNTAX ERRORS, @XR MUST POINT				*
		2122	*	OUTSIDE THE INPUT LINE BUFFER.				*
		2123	*	* IF SUTOBA TAKES THE ERROR EXIT TO SUTERR, THE BASIC MODE				*
		2124	*	INDICATOR IS SET ON AND THE NORMAL EXIT TO SCAIPL IS MADE.				*
		2125	*	THIS GUARANTEES THAT AN ERROR CONDITION WILL OCCUR IF A				*
		2126	*	DISK IS MOUNTED ON R1 THAT DOES NOT CONTAIN A WORKAREA.				*
		2127	*					*
		2128	*	REGISTER USAGE				*
		2129	*	REGISTER 1 (@BR) IS USED AS A BASE REGISTER WITH \$NUCBS AS THE				*
		2130	*	BASE ADDRESS. REGISTER 2 C@XR) IS USED INITIALLY TO POINT TO				*
		2131	*	THE INPUT LINE BUFFER AND LATER TO POINT TO THE APPROPRIATE				*
		2132	*	NUCLEUS VOLUME ID ENTRY.				*
		2133	*					*
		2134	*	SAVED/RESTORED AREAS				*
		2135	*	NONE				*
		2136	*					*
		2137	*	MODIFICATION CONSIDERATIONS				*
		2138	*	NONE				*
		2139	*					*
		2140	*	REQUIRED MODULES				*
		2141	*	* @SYSEQ - COMMON SYSTEM EQUATES				*
		2142	*	* @FXDEQ - NUCLEUS FIXED ADDRESS EQUATES				*
		2143	*	* @CY0EQ - CYLINDER ZERO EQUATES				*
		2144	*	* @WKAEQ - SYSTEM WORKAREA EQUATES				*
		2145	*	* @ERMEQ - ERROR MESSAGE EQUATES (SELECTED ERROR CODES)				*
		2146	*	* @SPFEQ - SYSTEM PROGRAM FILE EQUATES FOR ?GUFUD AND ?ERRPG				*
		2147	*	* @CANEQ - FIXED CORE LOCATIONS OUTSIDE THE NUCLEUS				*
		2148	*	* @VOLEQ - VOLUME LABEL EQUATES				*
		2149	*	* @HLTEQ - HALT EQUATES				*
		2150	*	* SCANIT - DELIMITER SCAN MODULE				*
		2151	*	* SUTOBA - MODULE TO CHECK WORKAREAS AND SYSTEM MODE				*
		2152	*	* SUPDAT - MODULE TO UPDATE DISK ERROR COUNTERS				*
		2153	*					*
		2154	*	OTHER				*
		2155	*	NONE				*
		2156	*	*****				*

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 23/12/23 PAGE 5
				05FF	2158	KRMOVE EQU *	START OF REMOVE KEYWORD MODULE	
					2159	* HDR #KRM OV,1	GENERATE PROGRAM HEADER	
					2160	*****		
					2161	* PROGRAM HEADER FOR DISK LOAD	*	
					2162	*****		
					2163	*#\$KRMO EQU X'0214'	DISK ADDR OF #KRM OV	
					2164	*#\$KRM EQU X'0C00'	CORE LOAD ADDRESS OF #KRM OV	
					2165	*#\$@KRM EQU 003	SECTOR CNT OF #KRM OV	
	0C00				2166	ORG #\$\$\$KRM	CORE LOAD ADDRESS	
				0C00	2167	\$\$\$\$\$ EQU *	FIRST LOCATION IN PROGRAM	
	0C00	7BD2D9D4D6E5		0C05	2168	DC CL6 '#KRM OV'	PROGRAM NAME	
	0C06	0C		0C06	2169	DC IL1 '012'	PROGRAM NUMBER OF #KRM OV	
				0C07	2170	\$KRM OV EQU *	ENTRY POINT TO PROGRAM	
					2171	*** END OF EXPANSION ***		
					2172	*		
	0C07	C2 01 03C0			2173	LA \$NUCBS,@BR	USE BR AS BASE REG W/ STARTING	
				03C0	2174	USING \$NUCBS,@BR	* ADDR OF NUCLEUS AS BASE	
					2175	*		
	0C0B	75 02 07			2176	L \$XRS AV(,@BR),@XR	PT XR TO BYTE AFTER KEYWORD	
	0C0E	BD 60 00			2177	CLI @ZERO(,@XR),KRM DSH	IS KEYWORD FOLLOWED BY INV '?'	
	0C11	C0 81 0D12			2178	BE KRM900	YES, 'INV DELIM' ERROR	
					2179	*		
	0C15	C0 87 0D4E			2180	B SCANIT	ELSE, BYPASS BLANKS	
	0C19	3C 01 0D6B			2181	MVI SCAMMA,SCACOM	SET SCANIT INDR TO ALLOW COMMA	
					2182	*		
	0C1D	BD 1E 00			2183	KRM100 CLI @ZERO(,@XR),@EOS	IS IT EOS ?	
	0C20	F2 81 61			2184	JE KRM400	YES, DEFAULT TO 'R1' PARAM	
					2185	*		
	0C23	34 02 0D1B			2186	ST KRM910+@OP1,@XR	SAVE XR VALUE	
					2187	*		
	0C27	8D 01 01 0D46			2188	CLC KRM DSP(,@XR),KRM RR1(KRMLR1) IS PARAM = 'R1' ?		
	0C2C	F2 81 0C			2189	JE KRM200	YES, SYNTAX CHECK FOR R1	
					2190	*		
	0C2F	8D 01 01 0D48			2191	CLC KRM DSP(,@XR),KRM RR2(KRMLR2) ELSE, IS PARAM = 'R2' ?		
	0C34	F2 81 20			2192	JE KRM300	YES, SYNTAX CHECK FOR R2	
					2193	*		
	0C37	C0 87 0D1C			2194	B KRM920	ELSE, GIVE 'INV PARAM' ERROR	

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	6
				2196	*						
				2197	*		R1 SPECIFIED				
				2198	*						
0C3B	E2	02	02	2199	KRM200	LA	KRMLR1(, @XR), @XR			INCR XR PAST 'R1'	
0C3E	C0	87	0D4E	2200		B	SCANIT			SCAN TO NON-DELIMITER	
0C42	D0	82	A9	2201		BL	\$CAERK(, @BR)			IF DANGLING COMMA, CALL ERR PROG	
				2202	*						
0C45	F2	84	06	2203		JH	KRM250			IF CHARS SCANNED, CHECK FOR EOS	
0C48	BD	1E	00	2204		CLI	@ZERO(, @XR), @EOS			WAS R1 FOLLOWED BY EOS(NO BLNK)	
0C4B	F2	01	CA	2205		JNE	KRM910			NO, 'INV PARAM' ERROR	
				2206	*						
0C4E	BD	1E	00	2207	KRM250	CLI	@ZERO(, @XR), @EOS			WAS R1 FOLLOWED BY EOS(W/ BLNK)	
0C51	F2	01	CE	2208		JNE	KRM930			NO, 'TOO MANY PARAMS' ERROR	
				2209	*						
0C54	F2	87	2D	2210		J	KRM400			ELSE, SYNTAX OK - PROCESS REMOVE	
				2211	*						
				2212	*		R2 SPECIFIED				
				2213	*						
0C57	E2	02	02	2214	KRM300	LA	KRMLR2(, @XR), @XR			INCR XR PAST 'R2'	
0C5A	C0	87	0D4E	2215		B	SCANIT			SCAN TO NON-DELIMITER	
0C5E	F2	82	D3	2216		JL	KRM999			IF DANGLING COMMA, CALL ERR PROG	
				2217	*						
0C61	F2	84	06	2218		JH	KRM350			IF CHARS SCANNED, CHECK FOR EOS	
				2219	*						
0C64	BD	1E	00	2220		CLI	@ZERO(, @XR), @EOS			WAS R2 FOLLOWED BY EOS(NO BLNK)	
0C67	F2	01	AE	2221		JNE	KRM910			NO, 'INV PARAM' ERROR	
				2222	*						
0C6A	BD	1E	00	2223	KRM350	CLI	@ZERO(, @XR), @EOS			WAS R2 FOLLOWED BY EOS(W/ BLNK)	
0C6D	F2	01	B2	2224		JNE	KRM930			NO, 'TOO MANY PARAMS' ERROR	
				2225	*						
0C70	7D	08	17	2226		CLI	\$DKSIZ(, @BR), \$DK600			IS DRIVE 2 ON THE SYSTEM ?	
0C73	F2	82	B2	2227		JL	KRM940			NO, 'DRIVE 2 NOT ON SYSTEM' ERR	
				2228	*						
0C76	3A	02	0D41	2229		SBN	KRMDPL+KRMDDA, KRMBR2			SET DPL TO READ R2	
0C7A	3C	87	0CAC	2230		MVI	KRM450+@Q, @UCB			SET INDR FOR R2	
0C7E	0E	01	0C87 0D4A	2231		ALC	KRM400+@OP1(KRML02), KRMVR2 PT XR TO \$VOLR2				

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	7
					2233	*					
					2234	*	PROCESS REMOVE				
					2235	*					
0C84	C2	02	03F6		2236	KRM400 LA	\$VOLID+*-* ,@XR			PT XR TO APPROPRIATE \$VOLID	
					2237	*				* ENTRY	
					2238	*	DISK KRM DPL, WAIT			READ VOLUME LABEL	
0C88	C0	87	0025		2239	B	\$DISKN			PERFORM PHYSICAL DISK OP	
0C8C	0D3F			0C8D	2240	DC	AL2(KRM DPL)			DPL ADDRESS	
0C8E	C0	87	0025		2241	B	\$DISKN			WAIT AND CHECK DISK ERRORS	
0C92	057F			0C93	2242	DC	AL2(\$WAITF)			WAIT DPL ADDRESS	
					2243	***	END OF EXPANSION ***				
					2244	*					
0C94	8D	05	05 0F08		2245	CLC	KRMD05(,@XR) ,KRMBUF+\$#TLBL(KRMLVO)			IS VOL-ID IN VOL-LBL	
					2246	*				* = \$VOLID ENTRY	
0C99	F2	01	95		2247	JNE	KRM960			NO, ERR CODE-'DISK NOT SAME AS	
					2248	*				* LAST MOUNTED'	
0C9C	C0	87	0DFB		2249	B	SUPDAT			UPDATE ERROR COUNTERS	
					2250	*					
0CA0	3C	80	0476		2251	MVI	\$CIMSK ,@NOP			MASK INQUIRY REQUEST	
0CA4	BC	00	05		2252	MVI	KRMD05(,@XR) ,@ZERO			CLEAR FILE LIB DADDR(LEFT BYTE)	
0CA7	AC	05	05 06		2253	MVC	KRMD05(,@XR) ,KRM006(KRMLVO ,@XR)			CLEAR VOLUME LBL TO ZEROS	
					2254	*					
0CAB	F2	80	1B		2255	KRM450 JC	KRM525 ,@NOP			NOP IF R1 SPEC - UCB IF R2 SPEC	
					2256	*					
0CAE	7A	20	16		2257	SBN	\$INDR3(,@BR) , \$MOUNT			SET IND TO ALLOW 'MOUNT' ONLY	
0CB1	7A	40	16		2258	SBN	\$INDR3(,@BR) , \$NWRKR			SET 'NO WORK AREA ON R1' INDR	
0CB4	7B	40	83		2259	SBF	\$WFNME(,@BR) , \$WFDEF			SET WORKFILE UNDEFINED INDR	
0CB7	3C	87	0D0C		2260	MVI	KRM650+@Q ,@UCB			SET SW TO CALL SUTOBA	

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	8
					2262	*					
					2263	*	CHECK SYSTEM PROGRAM FILE				
					2264	*					
	0CBB	38	01	0587	2265	KRM500	TBN \$BSADR,KRMFIX				IS CURRENT SYS PROG FILE
					2266	*					* ON FIXED DISK ?
	0CBF	F2	10	07	2267		JT KRM525				YES, CHECK FILE LIBRARY
					2268	*					
	0CC2	39	02	0587	2269		TBF \$BSADR,KRMBR2				IS CURRENT SYS PROG FILE
					2270	*					* ON R1 ?
	0CC6	F2	10	39	2271		JT KRM600				YES, PRINT MSG AND HARD HALT
					2272	*					
					2273	*	CHECK CURRENT PASSWORD				
					2274	*					
	0CC9	7D	00	19	2275	KRM525	CLI \$FILIB(,@BR),@ZERO				IS USER LOGGED ON?
	0CCC	F2	81	3C	2276		JE KRM650				IF NOT, GOOD EXIT
					2277	*					
	0CCF	78	01	1A	2278		TBN \$FILIB(,@BR),KRMFIX				IS FILE LIBRARY ON FIXED DISK ?
	0CD2	F2	10	36	2279		JT KRM650				YES, GOOD EXIT
					2280	*					
	0CD5	78	02	1A	2281		TBN \$FILIB(,@BR),KRMBR2				IS FILE LIBRARY ON R2 ?
	0CD8	F2	10	0A	2282		JT KRM540				YES, CHECK FOR R2 SPECIFIED
					2283	*					
	0CDB	3D	80	0CAC	2284		CLI KRM450+@Q,@NOP				ELSE, WAS R1 SPECIFIED ?
	0CDF	F2	81	0A	2285		JE KRM570				YES, PRINT MSG AND HARD HALT
	0CE2	F2	87	26	2286		J KRM650				ELSE, GOOD EXIT
					2287	*					
	0CE5	3D	87	0CAC	2288	KRM540	CLI KRM450+@Q,@UCB				WAS R2 SPECIFIED ?
	0CE9	F2	01	1F	2289		JNE KRM650				NO, GOOD EXIT
					2290	*					
	0CEC	0C	00	03D9 0D4D	2291	KRM570	MVC \$FILIB-1(1),KRMZER				CLEAR CURRENT PASSWORD
	0CF2	4C	01	1C 0D4D	2292		MVC \$USRDR(@CADDR,@BR),KRMZER				* AND DISK SPECIFICATION
	0CF7	4C	01	6D 0D4D	2293		MVC \$PASWD(@CADDR,@BR),KRMZER				* TO ZEROS
					2294	*					
	0CFC	7C	8F	0D	2295		MVI \$CAERR(,@BR),@@E541				SET 'CURRENT PSWD/DISK SPEC
					2296	*					* CANCELLED' ERROR CODE
	0CFF	D0	87	0D	2297		B \$CAERR(,@BR)				CALL ERROR PROGRAM
	0D02	7A	04	16	2299	KRM600	SBN \$INDR3(,@BR),\$ERHRD				SET HARD HALT IND IN ERRPGM
	0D05	7C	9E	0D	2300		MVI \$CAERR(,@BR),@@E558				SET ERR CODE- 'DISK CONTAINS SPF'
	0D08	D0	87	A9	2301		B \$CAERK(,@BR)				CALL ERROR PROGRAM
					2302	*					
					2303	*	EXIT				
					2304	*					
	0D0B	C0	80	0D8F	2305	KRM650	BC SUTOBA,@NOP+*-*				BR TO SUTOBA IF R1 IS SPEC
					2306	*					
	0D0F	D0	87	DD	2307		B \$CAIPL(,@BR)				BR TO \$CAIPL TO LOAD ?GUFUD

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	9
				2309	*						
				2310	*		SET ERROR CODES AND EXIT				
				2311	*						
0D12	7C	18	0D	2312	KRM900	MVI	\$CAERR(,@BR),@@E139			SET ERR CODE-'INV DELIM'	
0D15	F2	87	1C	2313		J	KRM999			CALL ERROR PROGRAM	
				2314	*						
0D18	C2	02	0000	2315	KRM910	LA	*-*,@XR			RESTORE XR	
				2316	*						
0D1C	7C	11	0D	2317	KRM920	MVI	\$CAERR(,@BR),@@E131			SET ERR CODE-'INV PARAM'	
0D1F	F2	87	12	2318		J	KRM999			CALL ERROR PROGRAM	
				2319	*						
0D22	7C	12	0D	2320	KRM930	MVI	\$CAERR(,@BR),@@E133			SET ERR CODE-'TOO MANY PARAMS'	
0D25	F2	87	0C	2321		J	KRM999			CALL ERROR PROGRAM	
				2322	*						
0D28	D2	02	00	2323	KRM940	LA	@ZERO(,@BR),@XR			SET XR SO NOT A SYNTAX ERROR	
0D2B	7C	39	0D	2324		MVI	\$CAERR(,@BR),@@E242			SET ERR CODE-'DRIVE 2 NOT HERE'	
0D2E	F2	87	03	2325		J	KRM999			CALL ERROR PROGRAM	
				2326	*						
0D31	7C	5D	0D	2327	KRM960	MVI	\$CAERR(,@BR),@@E410			SET ERR CODE-'DISK NOT SAME	
				2328	*					* AS LAST MOUNTED'	
0D34	D0	87	A9	2329	KRM999	B	\$CAERK(,@BR)			CALL ERROR PROGRAM	

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE 10
				2331	*					
				2332	*		EQUATES			
				2333	*					
				0001	2334	KRMDSP EQU	1			DISP TO RIGHT BYTE OF 'R1'-'R2'
				0002	2335	KRMLR1 EQU	2			LENGTH OF 'R1'
				0002	2336	KRMLR2 EQU	2			LENGTH OF 'R2'
				0060	2337	KRMDSH EQU	C'-'			CHARACTER CONSTANT FOR A DASH
				0002	2338	KRMDDA EQU	2			DISP IN DPL TO 2ND BYTE - DADDR
				0002	2339	KRMBR2 EQU	X'02'			R2 BIT INDR IN DADDR
				0002	2340	KRML02 EQU	2			LENGTH OF TWO BYTES
				0005	2341	KRMD05 EQU	5			DISP TO RIGHT BYTE OF VOL ID
				0006	2342	KRM006 EQU	6			DISP TO LEFT BYTE OF FILE
				2343	*					* LIBRARY DADDR
				0006	2344	KRMLVO EQU	6			LENGTH OF VOLUME ID
				0001	2345	KRMFIX EQU	X'01'			BIT INDR FOR FIXED DISK
0D37	3A	02	03D5		2346	SUTERR SBN	\$INDR2,\$CMODE			ERROR EXIT FOR SUTOBA
0D3B	C0	87	049D		2347	B	\$CAIPL			
				2348	*					
				2349	*		SAVE AREAS AND CONSTANTS			
				2350	*					
				2351	*KRMDPL DPL		FUNC=@DGET,DADDR=#VOLR1,CNT=#@VLAB,CADDR=KRMBUF			
				0D3F	2352	KRMDPL EQU	*			DISK PARAMETER LIST
0D3F	01			0D3F	2353		DC AL1(@DGET)			REQUESTED FUNCTION
0D40	0008			0D41	2354		DC AL2(#VOLR1)			DISK ADDRESS
0D42	01			0D42	2355		DC AL1(#@VLAB)			SECTOR COUNT
0D43	0F00			0D44	2356		DC AL2(KRMBUF)			BUFFER ADDRESS
				2357	***	END OF EXPANSION	***			
0D45	D9F1			0D46	2358	KRMRR1 DC	CL(KRMLR1)'R1'			CONSTANT OF 'R1'
0D47	D9F2			0D48	2359	KRMRR2 DC	CL(KRMLR2)'R2'			CONSTANT OF 'R2'
				2360	*					
0D49	0010			0D4A	2361	KRMVR2 DC	XL(KRML02)'0010'			INDR TO \$VOLID FOR R2 ENTRY
0D4B	01			0D4B	2362	KRMCL1 DC	IL1'1'			KEY FOR COMMAND LIGHT ONE
				2363	*					
0D4C	0000			0D4D	2364	KRMZER DC	XL(@CADDR)'0000'			ZERO FIELD FOR CLEARING DISK SPEC
				2365	*					
				2366	*		\$CANI			

SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	23/12/23	PAGE 11
		2368+		*****			
		2369+*	5703-XM1	COPYRIGHT IBM CORP. 1970			*
		2370+*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083			*
		2371+*					*
		2372+*		*****			*
		2373+*		STATUS			*
		2374+*		VERSION 1 MODIFICATION 0			*
		2375+*					*
		2376+*		FUNCTION			*
		2377+*		THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND			*
		2378+*		RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER.			*
		2379+*					*
		2380+*		ENTRY POINTS			*
		2381+*		* THE ENTRY POINT IS SCANIT.			*
		2382+*		* THE CALLING SEQUENCE IS AS FOLLOWS:			*
		2383+*		B SCANIT			*
		2384+*		WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE			*
		2385+*		EXAMINED.			*
		2386+*					*
		2387+*		INPUT			*
		2388+*		NONE			*
		2389+*					*
		2390+*		OUTPUT			*
		2391+*		NONE			*
		2392+*					*
		2393+*		EXTERNAL REFERENCES			*
		2394+*		\$CAERR - ERROR CODE SAVE AREA			*
		2395+*					*
		2396+*		EXITS, NORMAL			*
		2397+*		NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2398+*		SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN			*
		2399+*		A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR			*
		2400+*		MORE DELIMITERS WERE SCANNED.			*
		2401+*					*
		2402+*		EXITS, ERROR			*
		2403+*		ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2404+*		SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW			*
		2405+*		CONDITION.			*
		2406+*					*
		2407+*		TABLES/WORKAREAS			*
		2408+*		* SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED			*
		2409+*		* SCAMMA - LOC WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO			*
		2410+*		TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA			*
		2411+*		INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS.			*
		2412+*					*
		2413+*		ATTRIBUTES			*
		2414+*		RELOCATABLE AND RE-USABLE			*
		2415+*					*
		2416+*		CHARACTER CODE DEPENDENCY			*
		2417+*		THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR			*
		2418+*		INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.			*
		2419+*					*
		2420+*		NOTES			*
		2421+*		ERROR PROCEDURES			*
		2422+*		THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE			*
		2423+*		A CARRIAGE-RETURN CODE FOLLOWS A COMMA. UPON RETURN TO THE			*

SCANIT - DELIMETER SCAN MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 23/12/23 PAGE 12

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2424+*      CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE
2425+*      ERROR CODE IS SET IN $CAERR, AND MG WILU BE POINTING TO THE
2426+*      CARRIAGE-RETURN CHARACTER.
2427+*
2428+*      REGISTER USAGE
2429+*      REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING
2430+*      SCANNED FOR DELIMITERS.
2431+*
2432+*      SAVED/RESTORED AREAS
2433+*      UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS
2434+*      THE RETURN ADDRESS.
2435+*
2436+*      MODIFICATION CONSIDERATIONS
2437+*      NONE
2438+*
2439+*      REQUIRED MODULES
2440+*      * @SYSEQ - COMMON SYSTEM EQUATES
2441+*      * @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES
2442+*
2443+*      OTHER
2444+*      SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS
2445+*      MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS.
2446+*      THE INSTRUCTION TO DO THIS IS AS FOLLOWS:
2447+*      MVI    SCAMMA,SCACOM
2448+*
2449+*      TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE
2450+*      MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION:
2451+*      MVI    SCAMMA,SCACOF
2452+*
2453+*****

```

2455+*

2456+* EQUATES USED IN THIS SUBROUTINE

2457+*

0001	2458+SCAINC	EQU	1	TO INCREMENT POINTER
0001	2459+SCACOM	EQU	@BNE	SWITCH TO ALLOW SCANNING COMMA
0087	2460+SCACOF	EQU	@UCB	SWITCH TO SET OFF THE INDICATON
	2461+*			* FOR SCANNING A COMMA
0D4E	2462+SCANIT	EQU	*	ENTRY POINT TO THIS SUBROUTINE
0D4E 34 08 0D8A	2463+	ST	SCA500+@OP1,@ARR	SAVE RETURN ADDRESS
0D52 34 02 0D8C	2464+	ST	SCASVE,@XR	SAVE POINTER VALUE
0D56 3C 04 03CD	2465+	MVI	\$CAERR,@E110	SET ERROR CODE
0D5A F2 87 03	2466+	J	SCA200	GO TO PROCESS
0D5D E2 02 01	2467+SCA100	LA	SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR
0D60 BD 40 00	2468+SCA200	CLI	0(,@XR),@BLANK	IS THIS CHAR BLANK ?
0D63 C0 81 0D5D	2469+	BE	SCA100	YES, FETCH NEXT ONE
0D67 BD 6B 00	2470+	CLI	0(,@XR),@COMMA	IS IT A COMMA ?
0D6A F2 87 10	2471+SCA250	JC	SCA400,@UCB	UCS TO RETURN -- OR NOP IF
	2472+*			* SCAMMA IS ACTIVE AND CHAR
0D6D E2 02 01	2473+SCA300	LA	SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR
0D70 BD 40 00	2474+	CLI	0(,@XR),@BLANK	IS THIS CHAR A BLANK ?
0D73 C0 81 0D6D	2475+	BE	SCA300	YES, FETCH NEXT ONE
0D77 BD 1F 00	2476+	CLI	0(,@XR),@EOS+1	IS THIS EOS ?
0D7A F2 82 0A	2477+	JL	SCA500	IF NOT, SKIP ERROR ROUTINE
0D7D 34 02 0D8E	2478+SCA400	ST	SCACNT,@XR	SAVE NEW POINTER VALUE

SCANIT - DELIMETER SCAN MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE 13
0D81	0F	01	0D8E 0D8C		2479+	SLC	SCACNT(2),SCASVE			SET PSR TO EQUAL IF POINTER
					2480+*					* NOT ADVANCED
0D87	C0	87	0000		2481+SCA500	B	*-*			YES, RETURN
				0D6B	2482+SCAMMA	EQU	SCA250+@Q			TO SET SCAN COMMA INDICATOR
					2483+*					
					2484+*		SAVE AREA			
					2485+*					
				0D8B	2486+SCASV1	EQU	*			FIRST BYTE OF SCASVE
0D8B				0D8C	2487+SCASVE	DS	CL2			ORIGINAL POINTER VALUE SAVE
0D8D				0D8E	2488+SCACNT	DS	CL2			SAVE AREA FOR TOTAL CHAR SCAN
					2489+***			END OF SCANIT		***
					2490 *					

SUTOBA - SWITCH SYSTEM MODE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 23/12/23 PAGE 14
		2492		*****	
		2493	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		2494	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
		2495	*		*
		2496	*	*****	*
		2497	*	*STATUS	*
		2498	*	VERSION 1 MODIFICATION 0	*
		2499	*		*
		2500	*	*FUNCTION	*
		2501	*	SUTOBA IS RESPONSIBLE FOR CHANGING THE APPROPRIATE INDICATORS AND	*
		2502	*	DISK ADDRESSES FOR #GUFUD AND #ERRPG, DEPENDING ON THE STATUS OF	*
		2503	*	THE NUCLEUS WORKAREA INDICATORS: \$NWRKR AND \$NWRFT.	*
		2504	*		*
		2505	*	*ENTRY POINTS	*
		2506	*	* THE ENTRY POINT IS SUTOBA.	*
		2507	*	* THE CALLING SEQUENCE IS AS FOLLOWS:	*
		2508	*	B SUTOBA	*
		2509	*		*
		2510	*	*INPUT	*
		2511	*	INPUT TO SUTOBA IS THE STATUS OF \$NWRKR AND \$NWRFT, THE WORKAREA	*
		2512	*	INDICATORS.	*
		2513	*		*
		2514	*	*OUTPUT	*
		2515	*	OUTPUT FROM SUTOBA IS THE CORRECT SYSTEM MODE AND THE CORRECT	*
		2516	*	DISK ADDRESSES OF #GUFUD AND #ERRPG IN THE NUCLEUS SET.	*
		2517	*		*
		2518	*	*EYTERWAL REFERENCES	*
		2519	*	* \$CAERR - ERROR CODE SAVE AREA	*
		2520	*	* \$INDR3 - NUCLEUS BYTE CONTAINING \$NWRKR AND \$NWRKF, THE	*
		2521	*	WORKAREA INDICATORS	*
		2522	*	* \$INDR2 - NUCLEUS BYTE CONTAINING \$CMODE. SYSTEM MODE INDICATOR	*
		2523	*	* \$GUFIO - LOCATION IN NUCLEUS OF DISK ADDRESS OF #GUFUD	*
		2524	*	* \$EQMAD - LOCATION IN NUCLEUS OF DISK ADDRESS OF #ERRPG	*
		2525	*	* \$BSADR - SYSTEM PROGRAM FILE BASE ADDRESS	*
		2526	*	* #@GUFU - WORKAREA ADDRESS OF #GUFUD	*
		2527	*	* #@ERRP - WORKAREA ADDRESS OF #ERRPG	*
		2528	*	* #SGUFU - SYSTEM PROGRAM FILE ADDRESS OF #GUFUD	*
		2529	*	* #SERRP - SYSTEM PROGRAM FILE ADDRESS OF #ERRPG	*
		2530	*		*
		2531	*	*EXITS,NORMAL	*
		2532	*	NORMAL EXIT FROM SUTOBA IS TO THE BYTE FOLLOWING THE BRANCH TO	*
		2533	*	SUTOBA IN THE CALLING ROUTINE.	*
		2534	*		*
		2535	*	*EXITS, ERROR	*
		2536	*	ERROR EXIT FROM SUTOBA IS TO THE USER-DEFINED LABEL, SUTERR.	*
		2537	*		*
		2538	*	*TABLES/NORKAREAS	*
		2539	*	NONE	*
		2540	*		*
		2541	*	*ATTRIBUTES	*
		2542	*	RELOCATABLE AND RE-USABLE	*
		2543	*		*
		2544	*	*CHARACTER CODE DEPENDENCY	*
		2545	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
		2546	*	INTERNAL REPRESENTATION OF THE ETTETNAI. CHARACTER SET.	*
		2547	*		*

SUTOBA - SWITCH SYSTEM MODE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 23/12/23 PAGE 15

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2548 *NOTES *
2549 *   ERROR PROCEDURES *
2550 *   SUTOBA DETECTS AN ERROR CONDITION IF THE SYSTEM MODE UPON ENTRY *
2551 *   IS BASIC AND THE CALLING ROUTINE HAS DELETED THE WOREAREA ON *
2552 *   EITHER R1 OR F1, WHEN THIS OCCURS, SUTOBA PLACES THE SYSTEM IN *
2553 *   UTILITY MODE AND EXITS TO THE USER-DEFINED LABEL, SUTERR, *
2554 *   WITH THE APPROPRIATE ERROR CODE SET IN $CAERR. *
2555 * *
2556 *   REGISTER USAGE *
2557 *   REGISTER 8 (@ARR) IS SAVED UPON ENTRY TO SUTOBA AND IS USED AS *
2558 *   THE RETURN ADDRESS TO THE CALLING ROUTINE. *
2559 * *
2560 *   SAVED/RESTORED AREAS *
2561 *   NONE *
2562 * *
2563 *   MODIFICATION CONSIDERATIONS *
2564 *   NONE *
2565 * *
2566 *   REQUIRED MODULES *
2567 *   * @SYSEQ - COMMON SYSTEM EQUATES *
2568 *   * @FXDEQ - NUCLEUS FIXED ADDRESS EQUATES *
2569 *   * @SPFEQ - SYSTEM PROGRAM FILE EQUATES FOR #GUFUD AND #ERRPG *
2570 *   * @ERMEQ - ERROR MESSAGE EQUATES (SELECTED ERROR CODES) *
2571 *   * @WKAEQ - SYSTEM WOREAREA EQUATES *
2572 * *
2573 *   OTHER *
2574 *   NONE *
2575 *****

2577 *
2578 *           SWITCH TO BASIC MODE
2579 *
0D8F 2580 SUTOBA EQU * ENTRY POINT FOR SUTOBA
0D8F 34 08 0DF1 2581 ST SUT500+@OP1,@ARR SAVE USERS RETURN ADDRESS
2582 *
0D93 3C A1 03CD 2583 MVI $CAERR,@E572 NO WA ON F1-UTIL ENTERED ERR
0D97 39 80 03D6 2584 TBF $INDR3,$NWRKF IS A WORK AREA ON FIXED DISK ?
0D9B F2 90 0B 2585 JF SUT100 IF NOT, JUMP TO SET ERROR CODE
2586 *
0D9E 39 40 03D6 2587 TBF $INDR3,$NWRKR IS A WORK AREA ON REMOVABLE DK ?
0DA2 F2 10 12 2588 JT SUT200 IF YES, SKIP SETTING ERROR CODE
2589 *
0DA5 3C A2 03CD 2590 MVI $CAERR,@E573 NO WA ON R1-UTIL ENTERED ERR
0DA9 38 02 03D5 2591 SUT100 TBN $INDR2,$CMODE IS THIS BASIC MODE ?
0DAD F2 90 1A 2592 JF SUT300 NO, GO PUT USER IN UTILITY MOE
2593 *
0DB0 3C 87 0DEB 2594 MVI SUT400+@Q,@UCB ELSE, SET SW TO TAKE ERROR EXIT
0DB4 F2 87 13 2595 J SUT300 JUMP INTO UTILITY SECTION
2596 *
0DB7 3A 02 03D5 2597 SUT200 SBN $INDR2,$CMODE SET BASIC MODE INDR ON
0DBB 0C 01 0582 0DF4 2598 MVC $GUFIO-1(@DADDR),SUTWGU STORE WORK FILE ADDRESSES OF
0DC1 0C 01 0471 0DF6 2599 MVC $ERMAD-1(@DADDR),SUTWER * GUFUDI AND ERRPGM IN NUCLEUS
0DC7 F2 87 20 2600 J SUT400 RETURN TO CALLING ROUTINE
2601 *
2602 *           SWITCH TO UTILITY MODE
2603 *

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SUTOBA - SWITCH SYSTEM MODE

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0DCA	3B	02	03D5		2604	SUT300	SBF	\$INDR2,\$CMODE	SET UTILITY MODE INDR ON
					2605	*			
0DCE	0E	01	0DF8	0587	2606		ALC	SUTPGU(@DADDR), \$BSADR	INCR PROD FILE ADDRESSES OF
0DD4	0E	01	0DFA	0587	2607		ALC	SUTPER(@DADDR), \$BSADR	* GUFUDI AND ERRPGM BY 4BSADR
					2608	*			
0DDA	0C	01	0582	0DF8	2609		MVC	\$GUFIO-1(@DADDR), SUTPGU	STORE INCREMENTED ADDRESSES OF
0DE0	0C	01	0471	0DFA	2610		MVC	\$ERMAD-1(@DADDR), SUTPER	* GUFUDI AND ERRPGM IN NUCLEUS
					2611	*			
0DE6	31	10	0DF2		2612		LIO	SUTCL1,@CLOFF	TURN OFF COMMAND LIGHT ONE
0DEA	C0	80	0D37		2613	SUT400	BC	SUTERR,@NOP+*-*	IF BASIC DESIRED AND UTILITY
					2614	*			* ENTERED. GO TO SUTERR
0DEE	C0	87	0000		2615	SUT500	B	*-*	ELSE, RETURN TO USER
					2616	*			
					2617	*			
					2618	*		CONSTANTS AND SAVE AREAS IN SOMA	
0DF2	01			0DF2	2619	SUTCL1	DC	IL1'1'	KEY NO. FOR COMMAND LIGHT ONE
0DF3	0401			0DF4	2620	SUTWGU	DC	AL(@DADDR) (@GUFU)	SET UP CONSTANTS WHOSE ADDRESS
0DF5	0441			0DF6	2621	SUTWER	DC	AL(@DADDR) (@ERRP)	* IS THE WORK AREA ADDRESS
					2622	*			
				0DF7	2623	SUT600	EQU	*	START OF GUFUDI SPF ADDR
0DF7				0DF8	2624	SUTPGU	DS	AL(@DADDR)	AREA TO CONTAIN SYSTEM PROGRAM
0DF7					2625		ORG	SUT600	* FILE DISK ADDRESS OF GUFUDI,
0DF7	1880			0DF8	2626		DC	AL(@DADDR) (\$GUFU)	* INITIALLY
					2627	*			
				0DF9	2628	SUT700	EQU	*	START OR ERRPSM SPF ADDR
0DF9				0DFA	2629	SUTPER	DS	AL(@DADDR)	AREA TO CONTAIN SYSTEM PROGRAM.
0DF9					2630		ORG	SUT700	* FILE DISK ADDRESS OF ERRPGM
0DF9	18C0			0DFA	2631		DC	AL(@DADDR) (\$ERRP)	* INITIALLY
					2632	*****			
					2633	*			

SUPDAT - UPDATE VOLUME ERROR RATE TABLES

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 23/12/23 PAGE 17
		2635		*****	*
		2636	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		2637	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
		2638	*		*
		2639		*****	*
		2640	*	*STATUS -	*
		2641	*	VERSION 1 MODIFICATION 0	*
		2642	*		*
		2643	*	*FUNCTION	*
		2644	*	\$SUPDAT UPDATES THE INDIVIDUAL AND SYSTEM ERROR RATE COUNTERS	*
		2645	*	ON EACH VOLUME MOUNTED ON THE SYSTEM, THIS IS DONE BY ADDING	*
		2646	*	THE READ/WRITE COUNTERS STORED IN THE NUCLEUS TO THE COUNTERS	*
		2647	*	MAINTAINED ON THE DISKS. THE NUCLEUS COUNTERS ARE THEN SET	*
		2648	*	TO ZERO.	*
		2649	*		*
		2650	*	*ENTRY POINTS	*
		2651	*	ENTRY IS AT LOCATION SUPDAT. THE CALLING SEQUENCE IS:	*
		2652	*	B \$SUPDAT	*
		2653	*	A ONE SECTOR BUFFER MUST BE ALLOCATED FOR DISK I/O BY THE	*
		2654	*	CALLING PROGRAM AT LOCATION SUPBUF.	*
		2655	*		*
		2656	*	*INPUT	*
		2657	*	N/A	*
		2658	*		*
		2659	*	*OUTPUT	*
		2660	*	THE GENERAL REGISTERS ARE RESTORED TO ENTRY VALUES.	*
		2661	*		*
		2662	*	*EXTERNAL REFERENCES	*
		2663	*	\$PKERT - LOCATION OF ERROR RATE COUNTERS IN THE NUCLEUS.	*
		2664	*	\$DISKN - ENTRY TO DISK IOCS, DKDISK.	*
		2665	*	\$WAITF - ADDRESS OF DISK WAIT DPL.	*
		2666	*	SUPBUF - LOCATION OF DISK I/O BUFFER.	*
		2667	*		*
		2668	*	*EXITS, NORMAL	*
		2669	*	EXIT IS TO THE NEXT SEQUENTIAL INSTRUCTION IN THE CALLING PGM.	*
		2670	*		*
		2671	*	*EXITS, ERROR	*
		2672	*	N/A	*
		2673	*		*
		2674	*	*TABLES/WORK AREAS	*
		2675	*	N/A	*
		2676	*		*
		2677	*	*ATTRIBUTES	*
		2678	*	RELOCATABLE	*
		2679	*		*
		2680	*	*CHARACTER CODE DEPENDENCY	*
		2681	*	N/A	*
		2682	*		*
		2683	*	*NOTES	*
		2684	*	ERROR PROCEDURES	*
		2685	*	N/A	*
		2686	*		*
		2687	*	REGISTER USAGE	*
		2688	*	REGISTER 1 IS USED FOR BASE ADDRESSING, REGISTER 2	*
		2689	*	FOR INDEXING THE ERROR RATE TABLES	*
		2690	*		*

SUPDAT - UPDATE VOLUME ERROR RATE TABLES

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 23/12/23 PAGE 18

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2691 * SAVED RESTORED ARIAS *
2692 * N/A *
2693 * *
2694 * MODFICATION CONSIDERATIONS *
2695 * N/A *
2696 * *
2697 * REQUIRED MODULES *
2698 * @SYSEQ - GENERAL SYSTEM EQUATES *
2699 * @FXDEQ - NUCLEUS LOCATION EQUATES *
2700 * $CY0EQ - CYLINDER 0 EQUATES *
2701 *****

2703 *****
2704 * THIS ROUTINE UPDATES THE TOTAL READ-WRITE COUNTERS ON ALL DISKS *
2705 * 'MOUNTED' ON THE SYSTEM, THE MASTER READ/WRITE COUNTERS ON THE *
2706 * FIXED DISKS WILL ALSO BE UPDATED *
2707 *****
2708 *
2709 *SUPDAT ENTER BASE-BUPBSE,EXIT-SUP50,@XR,@ARR
0E0D 2710 USING SUPBSE,@BR BASE ADDRESS SPECIFICATION
0DFB 2711 SUPDAT EQU * MODULE ENTRY POINT
0DFB 34 01 0E81 2712 ST SUP500+@OP1,@BR SAVE @BR
0DFF C2 01 0E0D 2713 LA SUPBSE,@BR LOAD BASE REGISTER
0E03 74 02 78 2714 ST SUP501+@OP1(,@BR),@XR SAVE @BR
0E06 74 08 7C 2715 ST SUP502+@OP1(,@BR),@ARR SAVE RETURN ADDRESS
2716 *** END OF EXPANSION **
0E09 C2 02 0416 2717 LA $PKERT-#PKRTD,@XR POINT XR TO START OF COUNTERS
0E0D 9D 03 03 80 2718 SUP020 CLC #PKRTD(#PKRTL,@XR),SUPZER(,@BR) IS THERE SOMETHING TO
2719 * * UPDATE ?
0E11 F2 81 2B 2720 JE SUP100 SKIP UPDATE IF NOT
0E14 6C 01 85 01 2721 MVC SUPWTC(#PKCNT,@BR),#PKWTD(,@XR) SET WRT CNTR TO 4 BYTES
0E18 6C 01 89 03 2722 MVC SUPRDC(#PKCNT,@BR),#PKRDD(,@XR) SET READ CNTR TO 4 BYTES
0E1C 5C 07 9E 89 2723 SUP040 MVC SUPMST+SUPDSP(2*#RDWTL,@BR),SUPRDC(,@BR) SET MASTER ENTRY
2724 * DISK SUPDPL WAIT READ IN VOLUME SDP SCTR
0E20 C0 87 0025 2725 B $DISKN PERFORM PHYSICAL DISK OP
0E24 0E97 0E25 2726 DC AL2(SUPDPL) DPL ADDRESS
0E26 C0 87 0025 2727 B $DISKN WAIT AND CHECK DISK ERRORS
0E2A 057F 0E2B 2728 DC AL2($WAITF) WAIT DPL ADDRESS
2729 *** END OF EXPANSION ***

0E2C 1E 03 0F07 85 2731 ALC SUPBUF+#PKVWD(#RDWTL),SUPWTC(,@BR) ADD NEW WRITES TO SDR
0E31 1E 03 0F0B 89 2732 ALC SUPBUF+#PKVRD(#RDWTL),SUPRDC(,@BR) ADD NEW READS TO SUR
0E36 7C 02 8A 2733 MVI SUPDPL+@DCTRL(,@BR),@DPUT SET DPL FOR WRITE
2734 * DISK SUPDPL WRITE VOLUME SDP SCTR
0E39 C0 87 0025 2735 B $DISKN PERFORM PHYSICAL DISK OP
0E3D 0E97 0E3E 2736 DC AL2(SUPDPL) DPL ADDRESS
2737 *** END OF EXPANSION ***

0E3F 78 03 8C 2739 SUP100 TBN SUPDPL+@DSAD(,@BR),SUPEND ARE ALL DISKS FINISHED ?
0E42 F2 10 11 2740 JT SUP200 GO UPDATE SDR TOTAL CNTRS IF YES
0E45 5E 00 8C 81 2741 ALC SUPDPL+@DSAD(1,@BR),SUPONE(,@BR) SET NEXT DISK ADDRESS
0E49 7C 01 8A 2742 MVI SUPDPL+@DCTRL(,@BR),@DGET SET DPL TO READ*
0E4C E2 02 04 2743 LA #PKRTL(,@XR),@XR POINT TO NEXT INCORE ENTRY
0E4F 5E 00 11 96 2744 ALC SUP040+@D1(1,@BR),SUPMDP(,@BR) UPDATE MASTER TBL POINTER
0E53 D0 87 00 2745 B SUP020(,@BR) GO UPDATE NEXT DISK
2746 *

```

SUPDAT - UPDATE VOLUME ERROR RATE TABLES

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 23/12/23 PAGE 19

```

      2747 *SUP200 DISK SUPDP2, WAIT READ TOTAL RD/WT SDR SCTR
0E56 C0 87 0025      2748 SUP200 B $DISKN PERFORM PHYSICAL DISK OP
0E5A 0E9D      0E5B 2749 DC AL2(SUPDP2) DPL ADDRESS
0E5C C0 87 0025      2750 B $DISKN WAIT AND CHECK DISK ERRORS
0E60 057F      0E61 2751 DC AL2($WAITF) WAIT DPL ADDRESS
      2752 *** END OF EXPANSION ***

      2754 ALC SUPBUF+#PKMRW(8*#RDWTL), SUPMST+8*#RDWTL-1 ADD NEW RD/WT
0E62 0E 1F 0F2B 0EC3      2755 MVI SUPDP2+@DCTRL(, @BR), @DPUT SET WRITE FUNC CODE
0E68 7C 02 90      2756 * DISK SUPDP2, WAIT WRITE MASTER RD/WT CNTR SCTR
0E6B C0 87 0025      2757 B $DISKN PERFORM PHYSICAL DISK OP
0E6F 0E9D      0E70 2758 DC AL2(SUPDP2) DPL ADDRESS
0E71 C0 87 0025      2759 B $DISKN WAIT AND CHECK DISK ERRORS
0E75 057F      0E76 2760 DC AL2($WAITF) WAIT DPL ADDRESS
      2761 *** END OF EXPANSION ***

      2763 MVI #PKRTD(, @XR), @ZERO PREPARE CLEAR OF PK ERR/RATE TBL
0E77 BC 00 03      2764 MVC #PKRTD-1(4*#PKRTL-1, @XR), #PKRTD(, @XR) ZERO OUT TABLE
0E7A AC 0E 02 03      2765 *SUP500 EXIT @BR, @XR, RETURN
0E7E C2 01 0000      2766 SUP500 LA *-*, @BR RESTORE @BR
0E82 C2 02 0000      2767 SUP501 LA *-*, @XR RESTORE @XR
0E86 C0 87 0000      2768 SUP502 B *-* RETURN TO CALLING PROGRAM
      2769 *** END OF EXPANSION ***

      2771 *****
      2772 * CONSTANTS AND WORK AREAS *
      2773 *****

0E8A 00000000      0E8D 2774 SUPZER DC XL(#RDWTL) '00' ZERO
0E8E 01      0E8E 2775 SUPONE DC IL1 '1' ONE
0E8F 00000000      0E92 2776 SUPWTC DC 2AL2(*-*) VOLUME WRITE CNTR
0E93 00000000      0E96 2777 SUPRDC DC 2AL2(*-*) VOLUME READ CNTR
      2778 *SUPDPL DPL FUNC=@DGET, DADDR=#VLSDR, CNT=#@VLSD, CADDR=SUPBUF
      0E97 2779 SUPDPL EQU * DISK PARAMETER LIST
0E97 01      0E97 2780 DC AL1(@DGET) REQUESTED FUNCTION
0E98 000C      0E99 2781 DC AL2(#VLSDR) DISK ADDRESS
0E9A 01      0E9A 2782 DC AL1(#@VLSD) SECTOR COUNT
0E9B 0F00      0E9C 2783 DC AL2(SUPBUF) BUFFER ADDRESS
      2784 *** END OF EXPANSION ***
      2785 *SUPDP2 DPL FUNC=@DGET, DADDR=#MVSDR, CNT=#@MVSD, CADDR=SUFBUF
0E9D 01      0E9D 2786 SUPDP2 EQU * DISK PARAMETER LIST
0E9E 000D      0E9D 2787 DC AL1(@DGET) REQUESTED FUNCTION
0EA0 01      0E9F 2788 DC AL2(#MVSDR) DISK ADDRESS
0EA1 0F00      0EA0 2789 DC AL1(#@MVSD) SECTOR COUNT
      0EA2 2790 DC AL2(SUPBUF) BUFFER ADDRESS
      2791 *** END OF EXPANSION ***

0EA3 08      0EA3 2792 SUPMDP DC AL1(2*#RDWTL) MASTER TAKE POINTER INCREMENT
      0EA4 2793 SUPMST EQU * START OF MASTER UPDATE AREA
0EA4 00000000000000000000      0EC3 2794 DC 32AL1(*-*) MASTER UPDATE AREA
      0003 2795 SUPEND EQU X'03' F2 SCTR ADDR BITS
      0E0D 2796 SUPBSE EQU SUP020 BASE VALUE
      0007 2797 SUPDSP EQU 2*#RDWTL-1 DISP TO R1 RD/WT MASTER counter
      2798 *****

```

SUPDAT - UPDATE VOLUME ERROR RATE TABLES

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	23/12/23	PAGE	20
			2800	*	PATCH				
			2801	*****					
			2802	*	PATCH AREA 1				*
			2803	*****					
			2804	*	CALCULATE AREA LEFT IN THIS SECTOR				
			2805	*					
0F00		0EC4	2806	\$\$\$\$L1 EQU	*				START PATCH AREA 1
			2807	ORG	*,256,0				SET LOC CNTR TO NEXT SECTOR
		0F00	2808	\$\$\$\$T1 EQU	*				DEFINE ADDR OF SCTR BNDRY
0EC4			2809	ORG	\$\$\$\$L1				SET LOC CNTR OF START
			2810	*					* OF PATCH AREA
0EC4		0EFF	2811	\$\$\$\$\$1 DS	CL(\$\$\$\$T1-\$\$\$\$L1)				PATCH AREA
			2812	*****					
			2813	***	END OF EXPANSION ***				

[illegible]

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	0F00	2815	KRMBUF	EQU	*	BUFFER FOR VOLUME LABEL
	0F00	2816	SUPBUF	EQU	KRMBUF	BUFFER FOR SUPDAT
		2817		PRINT	ON	
	FFFF	2818		END		

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$	001	0C00	2167	
\$\$\$\$\$1	060	0EFF	2811	
\$\$\$\$L1	001	0EC4	2806	2809 2811
\$\$\$\$T1	001	0F00	2808	2811
\$\$\$CMD	001	0020	1307	
\$\$\$DAT	001	0040	1306	
\$\$\$EPL	001	0091	1303	
\$\$\$ERN	001	0080	1357	
\$\$\$FUN	001	0010	1308	
\$\$\$NLN	001	00A0	1353	
\$\$\$STD	001	0081	1302	
\$\$BNLN	001	0605	1283	1285
\$\$CDBS	001	08C0	1333	
\$\$CDND	001	0666	1292	
\$\$CDRD	001	0890	1331	1333
\$\$CKEY	001	0603	1281	
\$\$CKFF	001	0B3D	1313	
\$\$COFF	001	0B44	1312	
\$\$CSNS	001	209C	1342	
\$\$DATB	001	0BBF	1314	
\$\$EOSA	001	0AFE	1311	
\$\$ERSK	001	1C00	1352	
\$\$FITS	001	1D00	1360	
\$\$FLIB	001	06FF	1359	
\$\$ILEN	001	0601	1277	1279 1283
\$\$ILHD	001	0600	1275	1277
\$\$INLN	001	0607	1290	1292 1294
\$\$INND	001	06FA	1294	
\$\$KBDT	001	09E1	1301	1305
\$\$KBSN	001	09E2	1305	1310
\$\$KLD1	001	0600	1365	
\$\$KLD2	001	0700	1367	
\$\$KLD3	001	0C00	1369	
\$\$LPOS	001	09EB	1310	
\$\$PCNT	001	07E9	1326	
\$\$PLYN	001	2004	1340	
\$\$PRES	001	0890	1299	1301 1311 1312 1313 1314 1331
\$\$PRFL	001	2143	1344	
\$\$PRNT	001	0707	1320	1321 1325 1326
\$\$PRTN	001	0782	1321	
\$\$PSIO	001	07CE	1325	
\$\$PYCD	001	2200	1346	
\$\$PYMP	001	2000	1338	1340 1342 1344 1346
\$\$SLIB	001	1C00	1355	
\$\$TPCD	001	0606	1285	1290
\$\$UPAR	001	0602	1279	1281
\$\$WSPB	001	1E00	1358	
\$\$XIND	001	06FF	1356	1359
\$\$ZERO	001	0000	0223	0224 0226 0227 0228 0232 1338
\$#TALT	001	0075	0778	
\$#TBIS	001	00FC	0790	
\$#TCET	001	0069	0777	
\$#TCYL	001	005C	0776	
\$#THAD	001	00F2	0782	
\$#THEL	001	0004	0802	
\$#THVT	001	00F0	0781	

CROSS REFERENCE

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[illegible]

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SYMBOL	LEN	VALUE	DEFN	REFERENCES									VER 15, MOD 00		23/12/23	PAGE	24
\$CRUSH	001	0080	0475														
\$CSDPL	001	050E	0574	0575													
\$C0001	001	0464	0531	0537													
\$DATE	001	043A	0512	0513													
\$DBGUF	001	03E0	0474	0483													
\$DBLOK	001	0001	0424														
\$DFDET	001	03E8	0495	0496													
\$DISKN	001	0025	0226	2239	2241	2725	2727	2735	2748	2750	2757	2759					
\$DKERR	001	0008	0405														
\$DKSIZ	001	03D7	0449	0457	0498	2226											
\$DK100	001	0001	0451														
\$DK200	001	0002	0452														
\$DK400	001	0004	0453														
\$DK600	001	0008	0454	2226													
\$DK800	001	0010	0455														
\$DPLSV	001	0449	0523	0525													
\$DTNMB	001	0040	0270														
\$DTRDR	001	0040	0358														
\$ENDNU	001	0600	0617	1275	1299	1320	1356	1365	1367	1369							
\$ERDPL	001	046F	0542	0544													
\$ERFIL	001	0040	0297														
\$ERHRD	001	0004	0429	2299													
\$ERKEY	001	0080	0301														
\$ERLOG	001	0345	0231														
\$ERMAD	001	0472	0544	0545	2599*	2610*											
\$ERPND	001	0004	0402														
\$ERRCT	001	03CF	0303														
\$ERRPG	001	03CE	0291														
\$ERSFL	001	0035	0296														
\$ERSTK	001	0030	0294														
\$ER050	001	0363	0232														
\$ER1N2	001	0050	0299														
\$EXADR	001	0517	0577	0579													
\$EXCMD	001	0001	0331														
\$EXFTR	001	043B	0513	0518													
\$FCIND	001	0010	0409														
\$FDIND	001	0040	0416														
\$FEARR	001	0004	0224														
\$FEMAP	001	0588	0610	0611													
\$FILIB	001	03DA	0460	0461	2275	2278	2281	2291*									
\$FITIN	001	0010	0385														
\$FUIND	001	0020	0414														
\$GUFIO	001	0583	0607	0608	2598*	2609*											
\$GUFIR	001	0008	0259														
\$HISTE	001	042E	0510	0511													
\$HIST1	001	0435	0511	0512													
\$HRDER	001	0020	0355														
\$INDR1	001	03D4	0371	0397													
\$INDR2	001	03D5	0397	0422	2346*	2591	2597*	2604*									
\$INDR3	001	03D6	0422	0449	2257*	2258*	2299*	2584	2587								
\$INLNO	001	03CF	0289	0291	0303	0310											
\$INRPT	001	0020	0267														
\$IOIND	001	03D2	0338	0364													
\$IOPGS	001	0010	0478														
\$IOYES	001	0002	0253														
\$IPLDV	001	05FF	0614	0617													

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$IRKEY	001	0020	0477	
\$KEYBD	001	03E1	0483	0488
\$KEYCD	001	03C3	0247	0281
\$KEYDT	001	0040	0391	
\$KE090	001	00DE	0227	
\$KE130	001	01D5	0228	
\$KRMOV	001	0C07	2170	
\$KYBSY	001	0010	0264	
\$LDRTN	001	0571	0602	
\$LEVEL	001	03DF	0472	0474
\$LIST	001	0002	0426	
\$LMRGN	001	03C1	0242	0244
\$LNPTR	001	0080	0361	
\$LOADB	001	054A	0586	
\$LOADR	001	051A	0579	0582
\$LPRIO	001	03EA	0496	
\$LPROS	001	03E5	0491	0493
\$LPRP3	001	03E4	0490	0491
\$MOUNT	001	0020	0440	2257
\$MPDWN	001	0001	0340	
\$NEXTB	001	03E6	0493	0494
\$NEXTL	001	03E7	0494	0495
\$NOENB	001	0008	0432	
\$NOLST	001	0004	0256	
\$NUCBS	001	03C0	0239	0240 2173 2174
\$NWRKF	001	0080	0445	2584
\$NWRKR	001	0040	0442	2258 2587
\$PASWD	001	042D	0509	0510 2293*
\$PAUSD	001	04BA	0563	0565
\$PAUSE	001	0002	0333	
\$PGMDT	001	0020	0388	
\$PGMST	001	0010	0352	
\$PKERT	001	0419	0507	0509 2717
\$PLST1	001	0454	0528	0529
\$PLST2	001	045B	0529	0530
\$PLST3	001	0462	0530	0531
\$PRDEV	001	044B	0525	0527
\$PRESN	001	0002	0376	
\$PROCI	001	0001	0373	
\$PRPOS	001	03C2	0244	0247
\$PSDBR	001	04FA	0568	
\$PSDXR	001	04F2	0567	0568
\$PSTEP	001	0004	0334	
\$PSTMT	001	0008	0335	
\$PTCH1	001	03F5	0498	0502
\$READY	001	0080	0418	
\$REORD	001	0040	0476	
\$RLOAD	001	051E	0582	0584
\$RMRGN	001	03C0	0240	0242
\$RSTR	001	04D6	0565	0567 0569 0574
\$RUNIT	001	0001	0312	
\$SFAID	001	050D	0570	
\$SPRNT	001	0465	0537	0539
\$SRTRN	001	04FE	0569	0570
\$STEPT	001	0002	0313	
\$SWPCR	001	0511	0575	0577

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$TABLN	001	03CB	0284	0287
\$TFLOW	001	0008	0319	
\$TRACE	001	0004	0314	
\$TRALL	001	0010	0320	
\$TROVR	001	054E	0589	0592
\$TRUNK	001	0080	0272	
\$TRVAR	001	0020	0321	
\$UNMSK	001	048D	0550	0553
\$USRDR	001	03DC	0461	0462 2292*
\$VMDEF	001	0080	0325	
\$VOLF1	001	03FE	0504	0505
\$VOLF2	001	040E	0506	
\$VOLID	001	03F6	0502	0503 0507 2236
\$VOLR1	001	03F6	0503	0504
\$VOLR2	001	0406	0505	0506
\$WAITF	001	057F	0605	0607 2242 2728 2751 2760
\$WFDEF	001	0040	0519	2259
\$WFLOK	001	0008	0382	
\$WFNME	001	0443	0518	0523 2259*
\$WSIND	001	0004	0379	
\$XIND1	001	03D0	0310	0329
\$XIND2	001	03D1	0329	0338
\$XIND3	001	03D8	0457	0460
\$XPREC	001	0040	0322	
\$XRSAB	001	03C7	0282	0284 2176
\$ZTRAD	001	05A2	0611	
\$12K	001	0004	0466	
\$16CKY	001	0008	0468	
\$16K	001	0002	0465	
\$22IMP	001	0001	0463	
###BL	001	0000	1129	
###CK	001	0000	1257	
###CN	001	0000	1225	
###CO	001	0000	1017	
###CS	001	0000	1077	
###DR	001	0000	0821	
###ER	001	0000	1021	
###FS	001	0000	1117	
###IN	001	0000	1261	
###PW	001	0000	1265	
###RS	001	0000	1097	
###SA	001	0000	1085	
###SS	001	0000	1081	
###VU	001	0600	1041	
###0T	001	0700	0813	
###1T	001	0000	0817	
###BCO	001	0600	0829	
###BOV	001	0800	1101	
###DPR	001	0700	0837	
###DRE	001	0889	0853	
###DSP	001	2800	0873	
###ECM	001	0C00	1133	
###EFK	001	0C00	1153	
###ERR	001	0C00	1125	
###EXM	001	0C00	1013	
###FIL	001	0E00	1093	

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 23/12/23 PAGE 27

###FIS 001 0E00 1089
###FML 001 0200 1221
###FMS 001 0200 1061
###GRA 001 0889 0985
###GUF 001 0C00 1121
###INL 001 0600 1201
###INS 001 0600 0825
###KAL 001 0C00 0989
###KCA 001 0C00 1205
###KCH 001 0C00 0957
###KCN 001 0C00 1073
###KCT 001 0C00 0925
###KDE 001 0C00 0921
###KDI 001 0D00 1001
###KDN 001 0C00 0909
###KDO 001 0E00 1005
###KED 001 0C00 0845
###KEN 001 0C00 0849
###KEX 001 0C00 0869
###KGO 001 0C00 0841
###KHE 001 0C00 1025
###KKE 001 0C00 1253
###KLI 001 0C00 0929
###KLL 001 0920 1229
###KLO 001 0C00 0933
###KME 001 0D00 0913
###KMO 001 0C00 0857
###KNA 001 0C00 0969
###KOV 001 0E00 0889
###KPA 001 0C00 0865
###KPO 001 0C00 0953
###KPR 001 0C00 0977
###KRE 001 0C00 0897
###KRL 001 0700 0993
###KRM 001 0C00 0861
###KRN 001 0700 0881
###KRO 001 0D00 0885
###KRS 001 0C00 1209
###KRU 001 0C00 0905
###KRV 001 0800 0997
###KSA 001 0C00 0941
###KSE 001 0E00 0981
###KSO 001 0C20 1033
###KSS 001 0C00 0965
###KSV 001 0980 0961
###KSY 001 0C00 0973
###KWI 001 0C00 0901
###KWR 001 0C00 0893
###LOA 001 0600 0833
###MIP 001 0C00 1029
###SDS 001 0C00 1141
###SFF 001 0E00 1145
###SFL 001 0F00 1137
###SFO 001 1500 1109
###SFS 001 0C00 1105
###SPA 001 0C00 0945

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CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$SPO	001	0806	0949	
\$\$\$SPS	001	0C00	0937	
\$\$\$STR	001	1600	1113	
\$\$\$TDC	001	1000	0917	
\$\$\$TSY	001	1000	0877	
\$\$\$TVK	001	0FC0	1053	
\$\$\$UAL	001	0C00	1069	
\$\$\$UAT	001	0900	1165	
\$\$\$UCD	001	0900	1173	
\$\$\$UCN	001	0C00	1157	
\$\$\$UCP	001	0700	1161	
\$\$\$UDE	001	0C00	1177	
\$\$\$UDI	001	0C00	1181	
\$\$\$UEX	001	0C00	1065	
\$\$\$UIN	001	0C00	1169	
\$\$\$UPA	001	0C00	1149	
\$\$\$UPO	001	0C00	1217	
\$\$\$UPT	001	0C00	1213	
\$\$\$VCR	001	2000	1009	
\$\$\$VLO	001	0600	1045	
\$\$\$VOD	001	0600	1049	
\$\$\$VVM	001	0000	1057	
\$\$\$VXI	001	0600	1037	
\$\$\$ZDU	001	1100	1189	
\$\$\$ZLB	001	1100	1233	
\$\$\$ZLO	001	1100	1193	
\$\$\$ZLV	001	0F00	1249	
\$\$\$ZL1	001	0F00	1237	
\$\$\$ZL2	001	0F00	1241	
\$\$\$ZL3	001	0C00	1245	
\$\$\$ZTR	001	1000	1185	
\$\$\$ZUT	001	0C00	1197	
\$\$#BLN	001	18D4	1128	
\$\$#CKT	001	2118	1256	
\$\$#CNF	001	2000	1224	
\$\$#COR	001	0800	1016	
\$\$#CSA	001	1000	1076	
\$\$#DRT	001	0000	0820	
\$\$#ERM	001	0928	1020	
\$\$#FSP	001	1880	1116	
\$\$#INV	001	212C	1260	
\$\$#PWR	001	2300	1264	
\$\$#RSP	001	1780	1096	
\$\$#SAV	001	1180	1084	
\$\$#SSA	001	1128	1080	
\$\$#VUF	001	0B08	1040	
\$\$#0TR	001	0000	0812	
\$\$#1TR	001	0080	0816	
\$\$@#BL	001	0001	1130	
\$\$@#CK	001	0004	1258	
\$\$@#CN	001	0001	1226	
\$\$@#CO	001	003A	1018	
\$\$@#CS	001	003A	1078	
\$\$@#DR	001	0008	0822	
\$\$@#ER	001	0032	1022	
\$\$@#FS	001	0030	1118	

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 23/12/23 PAGE 29

#\$@#IN	001	003A	1262
#\$@#PW	001	00C0	1266
#\$@#RS	001	0030	1098
#\$@#SA	001	0108	1086
#\$@#SS	001	0001	1082
#\$@#VU	001	0002	1042
#\$@#0T	001	0018	0814
#\$@#1T	001	0018	0818
#\$@BCO	001	0018	0830
#\$@BOV	001	0018	1102
#\$@DPR	001	0005	0838
#\$@DRE	001	0001	0854
#\$@DSP	001	0004	0874
#\$@ECM	001	0006	1134
#\$@EFK	001	0002	1154
#\$@ERR	001	0003	1126
#\$@EXM	001	0003	1014
#\$@FIL	001	0009	1094
#\$@FIS	001	0009	1090
#\$@FML	001	0052	1222
#\$@FMS	001	0052	1062
#\$@GRA	001	0003	0986
#\$@GUF	001	0010	1122
#\$@INL	001	0010	1202
#\$@INS	001	0010	0826
#\$@KAL	001	000F	0990
#\$@KCA	001	000C	1206
#\$@KCH	001	000C	0958
#\$@KCN	001	0010	1074
#\$@KCT	001	0009	0926
#\$@KDE	001	0010	0922
#\$@KDI	001	0005	1002
#\$@KDN	001	0010	0910
#\$@KDO	001	000C	1006
#\$@KED	001	000E	0846
#\$@KEN	001	0006	0850
#\$@KEX	001	0003	0870
#\$@KGO	001	0002	0842
#\$@KHE	001	000C	1026
#\$@KKE	001	0006	1254
#\$@KLI	001	0011	0930
#\$@KLL	001	0001	1230
#\$@KLO	001	0008	0934
#\$@KME	001	0003	0914
#\$@KMO	001	0004	0858
#\$@KNA	001	0008	0970
#\$@KOV	001	0009	0890
#\$@KPA	001	0005	0866
#\$@KPO	001	000D	0954
#\$@KPR	001	0009	0978
#\$@KRE	001	0002	0898
#\$@KRL	001	0004	0994
#\$@KRM	001	0003	0862
#\$@KRN	001	0003	0882
#\$@KRO	001	000A	0886
#\$@KRS	001	000A	1210

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#\$@KRU	001	0003	0906
#\$@KRV	001	000D	0998
#\$@KSA	001	0011	0942
#\$@KSE	001	0004	0982
#\$@KSO	001	0005	1034
#\$@KSS	001	000B	0966
#\$@KSV	001	0002	0962
#\$@KSY	001	000F	0974
#\$@KWI	001	0002	0902
#\$@KWR	001	0002	0894
#\$@LOA	001	0013	0834
#\$@MIP	001	000D	1030
#\$@SDS	001	0004	1142
#\$@SFF	001	0008	1146
#\$@SFL	001	0005	1138
#\$@SFO	001	0003	1110
#\$@SFS	001	0011	1106
#\$@SPA	001	0004	0946
#\$@SPO	001	0003	0950
#\$@SPS	001	0001	0938
#\$@STR	001	0002	1114
#\$@TDC	001	0003	0918
#\$@TSY	001	0003	0878
#\$@TVK	001	0001	1054
#\$@UAL	001	0011	1070
#\$@UAT	001	000C	1166
#\$@UCD	001	000B	1174
#\$@UCN	001	0009	1158
#\$@UCP	001	000F	1162
#\$@UDE	001	000E	1178
#\$@UDI	001	0008	1182
#\$@UEX	001	000E	1066
#\$@UIN	001	000F	1170
#\$@UPA	001	0004	1150
#\$@UPO	001	0005	1218
#\$@UPT	001	0012	1214
#\$@VCR	001	0008	1010
#\$@VLO	001	0002	1046
#\$@VOD	001	0016	1050
#\$@VVM	001	0030	1058
#\$@VXI	001	0002	1038
#\$@ZDU	001	0008	1190
#\$@ZLB	001	0002	1234
#\$@ZLO	001	000C	1194
#\$@ZLV	001	0006	1250
#\$@ZL1	001	0007	1238
#\$@ZL2	001	000D	1242
#\$@ZL3	001	000A	1246
#\$@ZTR	001	0001	1186
#\$@ZUT	001	0014	1198
#\$BCOM	001	0080	0828
#\$BOLV	001	1780	1100
#\$DPRI	001	014C	0836
#\$DREA	001	0200	0852
#\$DSPL	001	0240	0872
#\$ECMA	001	1900	1132

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#\$EFKE	001	1990	1152	
#\$ERRP	001	18C0	1124	2631
#\$EXMS	001	07D4	1012	
#\$FILN	001	1724	1092	
#\$FIST	001	1700	1088	
#\$FMLN	001	1E00	1220	
#\$FMST	001	0D00	1060	
#\$GRAP	001	0690	0984	
#\$GUFU	001	1880	1120	2626
#\$INLN	001	1C84	1200	
#\$INST	001	0020	0824	
#\$KALL	001	06A4	0988	
#\$KCAL	001	1CC4	1204	
#\$KCHA	001	053C	0956	
#\$KCND	001	0F80	1072	
#\$KCTL	001	03BC	0924	
#\$KDEL	001	035C	0920	
#\$KDIS	001	0744	1000	
#\$KDNT	001	0300	0908	
#\$KDOV	001	0780	1004	
#\$KEDI	001	0188	0844	
#\$KENA	001	01C4	0848	
#\$KEXT	001	0234	0868	
#\$KGOS	001	0180	0840	
#\$KHEL	001	0A30	1024	
#\$KKEY	001	2100	1252	
#\$KLIS	001	0400	0928	
#\$KLLA	001	2004	1228	
#\$KLOG	001	0444	0932	
#\$KMER	001	030C	0912	
#\$KMOU	001	0204	0856	
#\$KNAM	001	05C0	0968	
#\$KOVN	001	0290	0888	
#\$KPAS	001	0220	0864	
#\$KPOO	001	0508	0952	
#\$KPRT	001	063C	0976	
#\$KREA	001	02BC	0896	
#\$KRLA	001	0700	0992	
#\$KRMO	001	0214	0860	
#\$KRNU	001	0280	0880	
#\$KROV	001	028C	0884	
#\$KRSU	001	1D24	1208	
#\$KRUN	001	02CC	0904	
#\$KRVL	001	0710	0996	
#\$KSAV	001	0488	0940	
#\$KSET	001	0680	0980	
#\$KSOV	001	0AC8	1032	
#\$KSSP	001	0594	0964	
#\$KSVL	001	058C	0960	
#\$KSYM	001	0600	0972	
#\$KWID	001	02C4	0900	
#\$KWRI	001	02B4	0892	
#\$LOAD	001	0100	0832	
#\$MIPP	001	0A80	1028	
#\$SDSY	001	192C	1140	
#\$SFFI	001	193C	1144	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
##\$FLO	001	1918	1136	
##\$FOV	001	1844	1108	
##\$FSY	001	1800	1104	
##\$SPAC	001	04CC	0944	
##\$SPOV	001	04DC	0948	
##\$SPSY	001	0484	0936	
##\$STRO	001	1850	1112	
##\$TDCK	001	0350	0916	
##\$TSYK	001	0250	0876	
##\$TVKB	001	0BAC	1052	
##\$UALL	001	0F00	1068	
##\$UATR	001	1A38	1164	
##\$UCDI	001	1AD8	1172	
##\$UCNF	001	19B8	1156	
##\$UCPL	001	19DC	1160	
##\$UDEL	001	1B24	1176	
##\$UDIS	001	1B5C	1180	
##\$UEXL	001	0EA8	1064	
##\$UINI	001	1A88	1168	
##\$UPAC	001	1980	1148	
##\$UPOV	001	1D24	1216	
##\$UPTF	001	1D5C	1212	
##\$VCRT	001	07B4	1008	
##\$VLOA	001	0B80	1044	
##\$VODK	001	0B88	1048	
##\$VVMR	001	0C00	1056	
##\$VXIT	001	0B00	1036	
##\$ZDUM	001	1BA4	1188	
##\$ZLBM	001	2008	1232	
##\$ZLOA	001	1BC4	1192	
##\$ZLVR	001	20B0	1248	
##\$ZL1M	001	2010	1236	
##\$ZL2M	001	2030	1240	
##\$ZL3M	001	2088	1244	
##\$ZTRA	001	1B9C	1184	
##\$ZUTM	001	1C14	1196	
##@#BAD	001	0455	0719	
##@#IO1	001	0459	0727	
##@#IO2	001	045D	0728	
##@#TAT	001	0941	0755	
##@#TBA	001	09A1	0759	
##@#TFS	001	0941	0753	
##@#TSY	001	0941	0757	
##@#VFP	001	0700	0745	
##@#VLP	001	093D	0748	
##@#WDB	001	050C	0740	
##@#WFT	001	0500	0738	
##@@#BA	001	0001	0720	
##@@#IO	001	0001	0732	
##@@#SC	001	0002	0729	
##@@#TA	001	0010	0756	
##@@#TB	001	0010	0760	
##@@#TS	001	0005	0758	
##@@#TW	001	0020	0754	
##@@#VM	001	0100	0749	
##@@#WD	001	00BD	0741	

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###WF 001 0003 0739
###04 001 0004 0731
###08 001 0008 0730
###BOV 001 0018 0708
###ECM 001 0006 0722
###ERR 001 0003 0716
###GUF 001 0010 0712
###LDS 001 0002 0718
###SDS 001 0004 0714
###SFF 001 0008 0726
###SFL 001 0005 0724
###SFO 001 0005 0734
###SFS 001 0011 0710
###VSF 001 0010 0762
###VSL 001 000F 0763
###VTR 001 0001 0747
#BOVL 001 0400 0707
#CORS 001 0005 0669
#ECMA 001 0481 0721
#ERRP 001 0441 0715 2621
#GUFU 001 0401 0711 2620
#LDSV 001 044D 0717
#MVSD 001 0001 0677 2789
#NERO 001 0003 0671
#OBRA 001 0002 0673
#PTFL 001 0006 0692
#PTFS 001 0001 0691
#SDSY 001 04AD 0713
#SFFI 001 04BD 0725
#SFLO 001 0499 0723
#SFOV 001 04C4 0733
#SFSY 001 0480 0709
#VCNT 001 0002 0689
#VLAB 001 0001 0684 2355
#VLSD 001 0001 0675 2782
#VSFI 001 09A1 0761
#VTRL 001 0708 0746
#WAF1 001 0401 0706
#WAR1 001 0400 0705
#CNDIS 001 0001 0644
#CNFIG 001 0005 0680
#CORSV 001 0010 0668
#DKEXT 001 0002 0651
#FIGSC 001 0001 0681
#HISCT 001 0006 0658
#HISDX 001 0003 0653
#HISLN 001 0008 0650 0651
#HISN1 001 0003 0656
#HISN2 001 0005 0657
#HISTC 001 0007 0660
#HISTN 001 0009 0662
#HISTQ 001 0000 0654
#HISTR 001 0001 0655
#HISTS 001 0008 0661
#HISTV 001 000F 0663
#HSEND 001 0007 0659

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#HSENT	001	0001	0652	
#IOSDR	001	0019	0679	
#KRNUM	001	0000	0001	
#MVSDR	001	000D	0676	2788
#NEROV	001	009C	0670	
#OBRAD	001	001D	0672	
#PKCNT	001	0002	0637	2721 2722
#PKMRW	001	002B	0638	2754*
#PKRDD	001	0003	0635	2722
#PKRTD	001	0003	0634	2717 2718 2763* 2764 2764*
#PKRTL	001	0004	0641	2718 2743 2764
#PKVRD	001	000B	0639	2732*
#PKVWD	001	0007	0640	2731*
#PKWTD	001	0001	0636	2721
#PTFDA	001	00DC	0690	
#RDWTL	001	0004	0642	2723 2731 2732 2754 2754 2774 2792 2797
#SDRDK	001	0011	0678	
#VLSDR	001	000C	0674	2781
#VLTBE	001	0008	0629	
#VOLF1	001	0009	0682	
#VOLNG	001	0006	0627	0629 0651
#VOLOC	001	0005	0628	
#VOLR1	001	0008	0683	2354
#VTCF1	001	0025	0686	
#VTCF2	001	0027	0688	
#VTCR1	001	0024	0685	
#VTCR2	001	0026	0687	
@@E001	001	0000	1907	1909
@@E003	001	0001	1909	1911
@@E004	001	0002	1911	1913
@@E005	001	0003	1913	1915
@@E006	001	0004	1915	1917
@@E007	001	0005	1917	1919
@@E008	001	0006	1919	1921
@@E009	001	0007	1921	1923
@@E010	001	0008	1923	1925
@@E011	001	0009	1925	1927
@@E012	001	000A	1927	1929
@@E013	001	000B	1929	1931
@@E014	001	000C	1931	1933
@@E015	001	000D	1933	1935
@@E016	001	000E	1935	1937
@@E017	001	000F	1937	1939
@@E018	001	0010	1939	1941
@@E019	001	0011	1941	1943
@@E020	001	0012	1943	1945
@@E021	001	0013	1945	1947
@@E023	001	0014	1947	1949
@@E024	001	0015	1949	1951
@@E025	001	0016	1951	1953
@@E026	001	0017	1953	1955
@@E027	001	0018	1955	1957
@@E028	001	0019	1957	1959
@@E029	001	001A	1959	1961
@@E030	001	001B	1961	1963
@@E031	001	001C	1963	1965

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@@E032	001	001D	1965	1967	
@@E035	001	001E	1967	1969	
@@E036	001	001F	1969	1971	
@@E037	001	0020	1971	1973	
@@E038	001	0021	1973	1975	
@@E039	001	0022	1975	1977	
@@E040	001	0023	1977	1979	
@@E041	001	0024	1979	1981	
@@E042	001	0025	1981	1983	
@@E043	001	0026	1983	1985	
@@E044	001	0027	1985	1987	
@@E045	001	0028	1987	1989	
@@E046	001	0029	1989	1991	
@@E060	001	002A	1991	1993	
@@E080	001	002B	1993		
@@E100	001	0000	1379	1381	
@@E101	001	0001	1381	1383	
@@E102	001	0002	1383	1385	
@@E103	001	0003	1385	1387	
@@E110	001	0004	1387	1389	2465
@@E112	001	0005	1389	1391	
@@E113	001	0006	1391	1393	
@@E114	001	0007	1393	1395	
@@E115	001	0008	1395	1397	
@@E116	001	0009	1397	1399	
@@E117	001	000A	1399	1401	
@@E120	001	000B	1401	1403	
@@E122	001	000C	1403	1405	
@@E123	001	000D	1405	1407	
@@E124	001	000E	1407	1409	
@@E129	001	000F	1409	1411	
@@E130	001	0010	1411	1413	
@@E131	001	0011	1413	1415	2317
@@E133	001	0012	1415	1417	2320
@@E134	001	0013	1417	1419	
@@E135	001	0014	1419	1421	
@@E136	001	0015	1421	1423	
@@E137	001	0016	1423	1425	
@@E138	001	0017	1425	1427	
@@E139	001	0018	1427	1429	2312
@@E142	001	0019	1429	1431	
@@E143	001	001A	1431	1433	
@@E150	001	001B	1433	1435	
@@E151	001	001C	1435	1437	
@@E160	001	001D	1437	1439	
@@E162	001	001E	1439	1441	
@@E163	001	001F	1441	1443	
@@E164	001	0020	1443	1445	
@@E200	001	0021	1445	1447	
@@E205	001	0022	1447	1449	
@@E210	001	0023	1449	1451	
@@E211	001	0024	1451	1453	
@@E212	001	0025	1453	1455	
@@E213	001	0026	1455	1457	
@@E215	001	0027	1457	1459	
@@E216	001	0028	1459	1461	

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@@E217	001	0029	1461	1463	
@@E220	001	002A	1463	1465	
@@E221	001	002B	1465	1467	
@@E222	001	002C	1467	1469	
@@E223	001	002D	1469	1471	
@@E225	001	002E	1471	1473	
@@E226	001	002F	1473	1475	
@@E227	001	0030	1475	1477	
@@E228	001	0031	1477	1479	
@@E229	001	0032	1479	1481	
@@E230	001	0033	1481	1483	
@@E232	001	0034	1483	1485	
@@E234	001	0035	1485	1487	
@@E237	001	0036	1487	1489	
@@E240	001	0037	1489	1491	
@@E241	001	0038	1491	1493	
@@E242	001	0039	1493	1495	2324
@@E248	001	003A	1495	1497	
@@E249	001	003B	1497	1499	
@@E250	001	003C	1499	1501	
@@E251	001	003D	1501	1503	
@@E252	001	003E	1503	1505	
@@E253	001	003F	1505	1507	
@@E254	001	0040	1507	1509	
@@E255	001	0041	1509	1511	
@@E256	001	0042	1511	1513	
@@E300	001	0043	1513	1515	
@@E301	001	0044	1515	1517	
@@E302	001	0045	1517	1519	
@@E303	001	0046	1519	1521	
@@E304	001	0047	1521	1523	
@@E305	001	0048	1523	1525	
@@E308	001	0049	1525	1527	
@@E310	001	004A	1527	1529	
@@E315	001	004B	1529	1531	
@@E316	001	004C	1531	1533	
@@E320	001	004D	1533	1535	
@@E325	001	004E	1535	1537	
@@E330	001	004F	1537	1539	
@@E335	001	0050	1539	1541	
@@E338	001	0051	1541	1543	
@@E340	001	0052	1543	1545	
@@E350	001	0053	1545	1547	
@@E351	001	0054	1547	1549	
@@E352	001	0055	1549	1551	
@@E360	001	0056	1551	1553	
@@E361	001	0057	1553	1555	
@@E362	001	0058	1555	1557	
@@E371	001	0059	1557	1559	
@@E380	001	005A	1559	1561	
@@E390	001	005B	1561	1563	
@@E400	001	005C	1563	1565	
@@E410	001	005D	1565	1567	2327
@@E415	001	005E	1567	1569	
@@E417	001	005F	1569	1571	
@@E420	001	0060	1571	1573	

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@@E430	001	0061	1573	1575	
@@E432	001	0062	1575	1577	
@@E433	001	0063	1577	1579	
@@E450	001	0064	1579	1581	
@@E451	001	0065	1581	1583	
@@E460	001	0066	1583	1585	
@@E461	001	0067	1585	1587	
@@E464	001	0068	1587	1589	
@@E465	001	0069	1589	1591	
@@E466	001	006A	1591	1593	
@@E467	001	006B	1593	1595	
@@E469	001	006C	1595	1597	
@@E470	001	006D	1597	1599	
@@E471	001	006E	1599	1601	
@@E473	001	006F	1601	1603	
@@E474	001	0070	1603	1605	
@@E475	001	0071	1605	1607	
@@E476	001	0072	1607	1609	
@@E477	001	0073	1609	1611	
@@E478	001	0074	1611	1613	
@@E479	001	0075	1613	1615	
@@E480	001	0076	1615	1617	
@@E481	001	0077	1617	1619	
@@E482	001	0078	1619	1621	
@@E483	001	0079	1621	1623	
@@E484	001	007A	1623	1625	
@@E485	001	007B	1625	1627	
@@E486	001	007C	1627	1629	
@@E487	001	007D	1629	1631	
@@E488	001	007E	1631	1633	
@@E489	001	007F	1633	1635	
@@E490	001	0080	1635	1637	
@@E491	001	0081	1637	1639	
@@E492	001	0082	1639	1641	
@@E493	001	0083	1641	1643	
@@E494	001	0084	1643	1645	
@@E495	001	0085	1645	1647	
@@E496	001	0086	1647	1649	
@@E497	001	0087	1649	1651	
@@E498	001	0088	1651	1653	
@@E500	001	0089	1653	1655	
@@E501	001	008A	1655	1657	
@@E530	001	008B	1657	1659	
@@E531	001	008C	1659	1661	
@@E535	001	008D	1661	1663	
@@E540	001	008E	1663	1665	
@@E541	001	008F	1665	1667	2295
@@E542	001	0090	1667	1669	
@@E543	001	0091	1669	1671	
@@E544	001	0092	1671	1673	
@@E545	001	0093	1673	1675	
@@E546	001	0094	1675	1677	
@@E547	001	0095	1677	1679	
@@E548	001	FFFF	1883		
@@E549	001	0096	1679	1681	
@@E550	001	0097	1681	1683	

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@@E551	001	0098	1683	1685	
@@E552	001	0099	1685	1687	
@@E553	001	009A	1687	1689	
@@E554	001	009B	1689	1691	
@@E555	001	009C	1691	1693	
@@E556	001	009D	1693	1695	
@@E558	001	009E	1695	1697	2300
@@E570	001	009F	1697	1699	
@@E571	001	00A0	1699	1701	
@@E572	001	00A1	1701	1703	2583
@@E573	001	00A2	1703	1705	2590
@@E574	001	00A3	1705	1707	
@@E575	001	FFFF	1885		
@@E578	001	00A4	1707	1709	
@@E579	001	FFFF	1887		
@@E580	001	FFFF	1889		
@@E585	001	00A5	1709	1711	
@@E595	001	FFFF	1891		
@@E597	001	FFFF	1893		
@@E598	001	FFFF	1895		
@@E600	001	00A6	1711	1713	
@@E601	001	00A7	1713	1715	
@@E602	001	00A8	1715	1717	
@@E603	001	00A9	1717	1719	
@@E604	001	00AA	1719	1721	
@@E606	001	00AB	1721	1723	
@@E607	001	00AC	1723	1725	
@@E608	001	00AD	1725	1727	
@@E609	001	00AE	1727	1729	
@@E610	001	00AF	1729	1731	
@@E611	001	00B0	1731	1733	
@@E612	001	00B1	1733	1735	
@@E613	001	00B2	1735	1737	
@@E614	001	00B3	1737	1739	
@@E700	001	00B4	1739	1741	
@@E701	001	00B5	1741	1743	
@@E710	001	00B6	1743	1745	
@@E712	001	00B7	1745	1747	
@@E713	001	00B8	1747	1749	
@@E714	001	00B9	1749	1751	
@@E715	001	00BA	1751	1753	
@@E716	001	00BB	1753	1755	
@@E717	001	00BC	1755	1757	
@@E718	001	00BD	1757	1759	
@@E720	001	00BE	1759	1761	
@@E721	001	00BF	1761	1763	
@@E723	001	00C0	1763	1765	
@@E724	001	00C1	1765	1767	
@@E725	001	00C2	1767	1769	
@@E726	001	00C3	1769	1771	
@@E727	001	00C4	1771	1773	
@@E728	001	00C5	1773	1775	
@@E729	001	00C6	1775	1777	
@@E730	001	00C7	1777	1779	
@@E732	001	00C8	1779	1781	
@@E752	001	00C9	1781	1783	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E753	001	00CA	1783	1785
@@E754	001	00CB	1785	1787
@@E755	001	00CC	1787	1789
@@E756	001	00CD	1789	1791
@@E757	001	00CE	1791	1793
@@E758	001	00CF	1793	1795
@@E759	001	00D0	1795	1797
@@E760	001	00D1	1797	1799
@@E761	001	00D2	1799	1801
@@E762	001	00D3	1801	1803
@@E763	001	00D4	1803	1805
@@E764	001	00D5	1805	1807
@@E765	001	00D6	1807	1809
@@E766	001	00D7	1809	1811
@@E767	001	00D8	1811	1813
@@E768	001	00D9	1813	1815
@@E769	001	00DA	1815	1817
@@E770	001	00DB	1817	1819
@@E771	001	00DC	1819	1821
@@E772	001	00DD	1821	1823
@@E773	001	00DE	1823	1825
@@E774	001	00DF	1825	1827
@@E775	001	00E0	1827	1829
@@E776	001	00E1	1829	1831
@@E777	001	00E2	1831	1833
@@E778	001	00E3	1833	1835
@@E779	001	00E4	1835	1837
@@E780	001	00E5	1837	1839
@@E781	001	00E6	1839	1841
@@E782	001	00E7	1841	1843
@@E783	001	00E8	1843	1845
@@E784	001	00E9	1845	1847
@@E785	001	00EA	1847	1849
@@E786	001	00EB	1849	1851
@@E790	001	00EC	1851	1853
@@E791	001	00ED	1853	1855
@@E792	001	00EE	1855	1857
@@E793	001	00EF	1857	1859
@@E794	001	00F0	1859	1861
@@E795	001	00F1	1861	1863
@@E796	001	00F2	1863	1865
@@E797	001	00F3	1865	1867
@@E798	001	00F4	1867	1869
@@E800	001	FFFF	1897	
@@E801	001	FFFF	1899	
@@E802	001	FFFF	1901	
@@E803	001	FFFF	1903	
@@E804	001	FFFF	1905	
@@E900	001	00F5	1869	1871
@@E901	001	00F6	1871	1873
@@E902	001	00F7	1873	1875
@@E903	001	00F8	1875	1877
@@E905	001	00F9	1877	1879
@@E906	001	00FA	1879	1881
@@E910	001	00FB	1881	
@ARR	001	0008	0016	2463 2581 2715

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@ASIGN	001	007C	0071	
@ASTER	001	005C	0069	
@BCRDL	001	0050	0088	
@BE	001	0081	0043	
@BF	001	0090	0052	
@BH	001	0084	0041	
@BL	001	0082	0042	
@BLANK	001	0040	0065	2468 2474
@BM	001	0082	0054	
@BNE	001	0001	0046	2459
@BNH	001	0004	0044	
@BNL	001	0002	0045	
@BNM	001	0002	0057	
@BNOL	001	0020	0050	
@BNOZ	001	0008	0049	
@BNP	001	0004	0056	
@BNZ	001	0001	0058	
@BOL	001	00A0	0048	
@BOZ	001	0088	0047	
@BP	001	0084	0053	
@BR	001	0001	0013	2173* 2174 2176 2201 2226 2257 2258 2259 2275 2278 2281 2292 2293 2295 2297 2299 2300 2301 2307 2312 2317 2320 2323 2324 2327 2329 2710 2712 2713* 2714 2715 2718 2721 2722 2723 2723 2731 2732 2733 2739 2741 2741 2742 2744 2744 2745 2755 2766*
@BT	001	0010	0051	
@BZ	001	0081	0055	
@B1	001	0001	0063	
@CADDR	001	0002	0142	2292 2293 2364
@CARDL	001	0060	0087	1292
@CHARA	001	00C1	0072	
@CHARF	001	00C6	0073	
@CHARR	001	00D9	0074	
@CHARZ	001	00E9	0075	
@CLOFF	001	0010	0094	2612*
@CLON	001	0011	0093	
@COMMA	001	006B	0066	2470
@CPLUS	001	004E	0079	
@DADDR	001	0002	0140	2598 2599 2606 2607 2609 2610 2620 2621 2624 2626 2629 2631
@DBFR1	001	0004	0129	
@DBFR2	001	0005	0130	
@DCALK	001	0001	0081	
@DCBCY	001	0009	0115	
@DCBT1	001	0050	0117	
@DCNT	001	0003	0128	
@DCST1	001	0040	0116	
@DCTRL	001	0000	0125	2733* 2742* 2755*
@DCYL	001	0001	0126	
@DD2	001	0003	0030	
@DGET	001	0001	0134	2353 2742 2780 2787
@DOLAR	001	005B	0068	
@DOP2	001	0004	0028	
@DPLNG	001	0006	0132	
@DPOS	001	0000	0133	
@DPUT	001	0002	0135	2733 2755
@DSAD	001	0002	0127	2739 2741*
@DSBCY	001	0004	0106	

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 23/12/23 PAGE 41

@DSCS1 001 0000 0107
@DSIVF 001 0003 0138
@DSPIN 001 0002 0131
@DTRSZ 001 0018 0085
@DVBCY 001 0007 0108
@DVRFY 001 0031 0136
@DWAIT 001 00FF 0137
@DWBCY 001 0005 0103
@DWSIZ 001 00C0 0105
@DWTB1 001 0003 0104
@DZERO 001 00F0 0064
@D1 001 0002 0026
@EOF 001 001C 0077
@EOFTC 001 0075 0162
@EOS 001 001E 0076
@FDDBC 001 0000 0195
@FDE1 001 000C 0200
@FDFNA 001 000B 0198
@FDHLN 001 0002 0208
@FDLNC 001 0002 0193
@FDNSC 001 0003 0210
@FDSD 001 0000 0206
@FLACE 001 0009 0197
@FLDBC 001 0001 0196
@FLENT 001 0004 0201
@FLFNA 001 0002 0199
@FLHLN 001 0002 0209
@FLLNC 001 0002 0194
@FLNSC 001 0001 0211
@FLSD 001 0001 0207
@HCEPK 001 003C 2025
@HCOPS 001 001C 2032
@HCOPY 001 081C 2027
@HCRHE 001 7858 2048
@HDNRY 001 1008 2013
@HDRHE 001 7854 2046
@HDRLN 001 0007 0092
@HDRV1 001 7840 2038
@HDRV2 001 7844 2040
@HDTRD 001 1040 2009
@HDTRJ 001 1010 2011
@HERPG 001 087C 2015
@HFEHT 001 0804 2030
@HIPLE 001 006C 2022
@HKBER 001 2040 2005
@HKBHE 001 7848 2042
@HLOGE 001 1844 2017
@HPRER 001 0070 2007
@HPRHE 001 784C 2044
@HUNSF 001 1850 2020
@IAR 001 0010 0017
@INDEX 001 0001 0156
@INST3 001 0003 0032
@INST4 001 0004 0033
@INST5 001 0005 0034
@INST6 001 0006 0035

2744*

2183 2204 2207 2220 2223 2476

1320

0157

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@I1IAR	001	00C0	0020	
@LINSZ	001	00F4	0084	1294
@MAPEN	001	0005	0089	
@MINCR	001	2000	0083	
@MINUS	001	0060	0080	
@NOP	001	0080	0040	2251 2255 2284 2305 2613
@NUMBR	001	007B	0070	
@OPD2	001	0004	0029	
@OP1	001	0003	0027	2186* 2231* 2463* 2581* 2712* 2714* 2715*
@OP2	001	0005	0031	
@PCTRL	001	0000	0149	
@PDATA	001	0003	0151	
@PGCSZ	001	0020	0082	0083
@PPLNG	001	0004	0148	
@PRCNT	001	0001	0150	
@PRETR	001	00C0	0154	
@PRINT	001	0040	0152	0154
@PSR	001	0004	0015	
@PWAIT	001	00FF	0158	
@P1IAR	001	0020	0018	
@P2IAR	001	0040	0019	
@Q	001	0001	0024	2230* 2260* 2284 2288 2482 2594*
@REGL	001	0002	0012	
@RETRN	001	0080	0153	0154
@RLDWN	001	004F	0159	
@RTRNC	001	0080	0161	
@SBLN	001	0005	0170	
@SBLNL	001	0002	0184	
@SCTSZ	001	0100	0100	
@SDFLN	001	0007	0090	
@SDF0	001	0000	0166	
@SDF1	001	0001	0167	
@SDF2	001	0002	0168	
@SDF3	001	0003	0169	
@SECCY	001	0030	0086	
@SIST	001	0001	0181	
@SLASH	001	0061	0067	
@SLAST	001	0002	0183	
@SMIDL	001	0003	0182	
@SNULL	001	0080	0173	
@SONLY	001	0000	0180	
@STEXT	001	0007	0172	
@STYPE	001	0006	0171	
@TBCNT	001	0000	0160	
@TBLEF	001	0010	0155	0157
@TBLIX	001	0011	0157	
@UCB	001	0087	0039	2230 2260 2288 2460 2471 2594
@UPARW	001	005A	0078	
@VADDR	001	0002	0141	
@VENTA	001	0056	0113	
@VMDDV	001	00FE	0114	
@VMFD1	001	0000	0109	
@VMFD2	001	0001	0110	
@VMRS3	001	0002	0112	
@VMTRL	001	0001	0111	
@VOLID	001	0006	0091	

CROSS REFERENCE																		
SYMBOL	LEN	VALUE	DEFN	REFERENCES							VER 15,	MOD 00	23/12/23	PAGE	43			
@VQ	001	0001	0025															
@WSFIT	001	0500	0101															
@WSTBL	001	0503	0102															
@XR	001	0002	0014	2176*	2177	2183	2186	2188	2191	2199	2199*	2204	2207	2214	2214*			
				2220	2223	2236*	2245	2252	2253	2253	2315*	2323*	2464	2467	2467*			
				2468	2470	2473	2473*	2474	2476	2478	2714	2717*	2718	2721	2722			
				2743	2743*	2763	2764	2764	2767*									
@ZERO	001	0000	0062	2177	2183	2204	2207	2220	2223	2252	2275	2323	2763					
KRMBR2	001	0002	2339	2229	2269	2281												
KRMBUF	001	0F00	2815	2245	2356	2816												
KRMCL1	001	0D4B	2362															
KRMDDA	001	0002	2338	2229*														
KRMDPL	001	0D3F	2352	2229*	2240													
KRMDSH	001	0060	2337	2177														
KRMDSP	001	0001	2334	2188	2191													
KRMD05	001	0005	2341	2245	2252*	2253*												
KRMFIX	001	0001	2345	2265	2278													
KRMLR1	001	0002	2335	2188	2199	2358												
KRMLR2	001	0002	2336	2191	2214	2359												
KRMLVO	001	0006	2344	2245	2253													
KRML02	001	0002	2340	2231	2361													
KRMOVE	001	05FF	2158															
KRMRR1	002	0D46	2358	2188														
KRMRR2	002	0D48	2359	2191														
KRMVR2	002	0D4A	2361	2231														
KRMZER	002	0D4D	2364	2291	2292	2293												
KRM006	001	0006	2342	2253														
KRM100	003	0C1D	2183															
KRM200	003	0C3B	2199	2189														
KRM250	003	0C4E	2207	2203														
KRM300	003	0C57	2214	2192														
KRM350	003	0C6A	2223	2218														
KRM400	004	0C84	2236	2184	2210	2231*												
KRM450	003	0CAB	2255	2230*	2284	2288												
KRM500	004	0CB B	2265															
KRM525	003	0CC9	2275	2255	2267													
KRM540	004	0CE5	2288	2282														
KRM570	006	0CE C	2291	2285														
KRM600	003	0D02	2299	2271														
KRM650	004	0D0B	2305	2260*	2276	2279	2286	2289										
KRM900	003	0D12	2312	2178														
KRM910	004	0D18	2315	2186*	2205	2221												
KRM920	003	0D1C	2317	2194														
KRM930	003	0D22	2320	2208	2224													
KRM940	003	0D28	2323	2227														
KRM960	003	0D31	2327	2247														
KRM999	003	0D34	2329	2216	2313	2318	2321	2325										
SCACNT	002	0D8 E	2488	2478*	2479*													
SCACOF	001	0087	2460															
SCACOM	001	0001	2459	2181														
SCAINC	001	0001	2458	2467	2473													
SCAMMA	003	0D6B	2482	2181*														
SCANIT	001	0D4 E	2462	2180	2200	2215												
SCASVE	002	0D8 C	2487	2464*	2479													
SCASV1	001	0D8B	2486															
SCA100	003	0D5 D	2467	2469														

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SCA200	003	0D60	2468	2466
SCA250	003	0D6A	2471	2482
SCA300	003	0D6D	2473	2475
SCA400	004	0D7D	2478	2471
SCA500	004	0D87	2481	2463* 2477
SUPBSE	004	0E0D	2796	2710 2713
SUPBUF	001	0F00	2816	2731* 2732* 2754* 2783 2790
SUPDAT	001	0DFB	2711	2249
SUPDPL	001	0E97	2779	2726 2733* 2736 2739 2741* 2742*
SUPDP2	001	0E9D	2786	2749 2755* 2758
SUPDSP	001	0007	2797	2723*
SUPEND	001	0003	2795	2739
SUPMDP	001	0EA3	2792	2744
SUPMST	001	0EA4	2793	2723* 2754
SUPONE	001	0E8E	2775	2741
SUPRDC	002	0E96	2777	2722* 2723 2732
SUPWTC	002	0E92	2776	2721* 2731
SUPZER	004	0E8D	2774	2718
SUP020	004	0E0D	2718	2745 2796
SUP040	004	0E1C	2723	2744*
SUP100	003	0E3F	2739	2720
SUP200	004	0E56	2748	2740
SUP500	004	0E7E	2766	2712*
SUP501	004	0E82	2767	2714*
SUP502	004	0E86	2768	2715*
SUTCL1	001	0DF2	2619	2612
SUTERR	004	0D37	2346	2613
SUTOBA	001	0D8F	2580	2305
SUTPER	002	0DFA	2629	2607* 2610
SUTPGU	002	0DF8	2624	2606* 2609
SUTWER	002	0DF6	2621	2599
SUTWGU	002	0DF4	2620	2598
SUT100	004	0DA9	2591	2585
SUT200	004	0DB7	2597	2588
SUT300	004	0DCA	2604	2592 2595
SUT400	004	0DEA	2613	2594* 2600
SUT500	004	0DEE	2615	2581*
SUT600	001	0DF7	2623	2625
SUT700	001	0DF9	2628	2630

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #KRNUM IS 3840 DECIMAL.
00 001 0DF7 2622 2624
SUT700 001 0DF9 2627 2629

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #KRNUM IS 3840 DECIMAL.
02 0DF6 2620 2598
SUTWGU 002 0DF4 2619 2597
SUT100 004 0DA9 2590 2584
SUT200 004 0DB7 2596 2587
SUT300 004 0DCA 2603 2591 2594
SUT400 004 0DEA 2612 2593* 2599
SUT500 004 0DEE 2614 2580*
SUT600 001 0DF7 2622 2624

SUT700 001 0DF9 2627 2629

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 3