

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

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

EXTERNAL SYMBOL LIST

SYMBOL TYPE

#KRUNI MODULE

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15	, MOD	00	03/07/20	PAGE	2
	0000				1	#KRUNI	START 0							
					2		PRINT ON,NODATA							
					3	*	@SYS EXP-N							
				212+			PRINT ON							
				213	*		@HDW EXP-N							
				397+			PRINT ON							
				398	*		@FXD EXP-N							
				802+			PRINT ON							
				803	*		@CAN EXP-N							
				906+			PRINT ON							
				907	*		@DIR EXP-N							
				1027+			PRINT ON							
				1028	*		@WKA EXP-N							
				1098+			PRINT ON							
				1099	*		@SPF EXP-N							
				1563+			PRINT ON							
				1564	*		@ERM EXP-N							
				2186+			PRINT ON							
	1F00	2187	B\$PTBF		EQU		X'1F00'							

#KRUNI - KEYWORD COMMAND RUN

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		2189 *	HDR	#KRUNI, 0		
		2190	*****			
		2191	* PROGRAM HEADER FOR DISK LOAD			
		2192	*****			
		2193	*#\$KRUN	EQU X'02CC'	DISK ADDR OF #KRUNI	
		2194	*#\$KRU	EQU X'0C00'	CORE LOAD ADDRESS OF #KRUNI	
	0C00	2195	*#\$@KRU	EQU 003	SECTOR CNT OF #KRUNI	
		2196	ORG	#\$#KRU	CORE LOAD ADDRESS	
	0C00 7BD2D9E4D5C9	0C00	2197	\$\$\$\$\$\$ EQU *	FIRST LOCATION IN PROGRAM	
		0C05	2198	DC CL6 '#KRUNI'	PROGRAM NAME	
	0C06 17	0C06	2199	DC IL1 '023'	PROGRAM NUMBER OF IKRUNI	
		0C07	2200	#KRUN EQU *	ENTRY POINT TO PROGRAM	
		2201	*** END OF EXPANSION ***			

#KRUNI - KEYWORD COMMAND RUN

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2203 ****
2204 * 5703-XM1 COPYRIGHT IBM CORP. 1970 *
2205 * REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE. 120-2083 *
2206 *
2207 ****
2208 *STATUS*
2209 * VERSION 1 MODIFICATION 0 *
2210 *
2211 *FUNCTION*
2212 * * THIS PROGRAM IS CALLED BY THE COMMAND ANALYZER WHEN A RUN OR *
2213 * STEP OR TRACE COMMAND IS ISSUED. FOR THE RUN OR STEP COMMAND, *
2214 * IT CHECKS THE SYNTAX OF THE COMMAND KEYWORD AND SETS THE PRIMARY *
2215 * EXECUTION INDICATOR, $XIND1, ACCORDINGLY. IF NO PARAMETER IS *
2216 * SPECIFIED. THE COMPILER WILL BE LOADED INTO CORE AND EXECUTED. *
2217 * IF A PARAMETER IS SPECIFIED. IT IS ASSUMED TO BE A FILE *
2218 * SPECIFICATION. LINKAGE TO THE COMPILER IS SET UP, AND KEDITN IS *
2219 * LOADED INTO CORE. IF KEDITN FINDS NO ERRORS, IT WILL LOAD THE *
2220 * SPECIFIED PROGRAM FILE INTO THE WORK FILE AND THEN LOAD AND *
2221 * EXECUTE THE COMPILER. *
2222 * * FOR THE TRACE COMMAND. IT WILL SYNTAX CHECK THE PARAMETERS OF *
2223 * THE COMMAND AND SET UP A MASK FOR THE PRIMARY EXECUTION *
2224 * INDICATOR. IF A LIST OF BASIC-IDENTIFIERS IS PRESENT, IT WILL *
2225 * BE WRITTEN TO VIRTUAL MEMORY FOR LATER USE BY THE COMPILER. *
2226 * IF NO ERRORS WERE FOUND, IT WILL EXIT TO CHECK THE STATUS OF *
2227 * THE WORK FILE AND LOAD THE COMPILER. *
2228 *
2229 *ENTRY POINTS*
2230 * * THE ENTRY IS KRUNIT. THE BASE AND INDEX REGISTERS ARE NOT SAVED. *
2231 * BOTH REGISTERS ARE USED. *
2232 *
2233 *INPUT*
2234 * NONE *
2235 *
2236 *OUTPUT*
2237 * NONE *
2238 *
2239 *EXTERNAL REFERENCES*
2240 * $XIND2 - ADDRESS OF EXECUTION INDRS *
2241 * $XRSAV - ADDRESS OF 2 BYTE SAVE AREA *
2242 * SCANIT - ADDRESS OF ENTRY POINT TO SCAN ROUTINE *
2243 * $WFNME - ADDRESS OF WORK FILE NAME *
2244 * $CAERR - ADDRESS OF ERROR CODE FOR ERROR PGM *
2245 * $INDR1 - ADDRESS OF WORK FILE STATUS INDRS *
2246 * $CAERK - ADDRESS OF ERROR CODE FOR ERROR PGM *
2247 * $XIND3 - ADDRESS OF EXECUTION INDRS *
2248 * $XIND1 - ADDRESS OF PRIMARY EXECUTION INDRS *
2249 * $RLOAD - ADDRESS OF ENTRY TO BLAST LOAD PGM NOT RESIDING ON CYL4 *
2250 * $SXIND - ADDRESS OF EXECUTION INDR USED BY KEDITN *
2251 * SDISKN - ADDRESS OF ENTRY TO DISK IOCR *
2252 * $$ILEN - ADDRESS OF INPUT LINE BUFFER HEADER *
2253 *
2254 *EXITS, NORMAL*
2255 * NORMAL EXIT IS MADE TO $RLOAD TO LOAD AND EXECUTE COMPILER OR *
2256 * KEDITN. *
2257 *
2258 *EXITS, ERROR*

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#KRUNI - KEYWORD COMMAND RUN

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2259 * SAME AS FOR NORMAL EXITS, BUT ABNORMAL EXIT.
 2260 *
 2261 *TABLES/WORK AREA
 2262 * * THE CONSTANTS AND DPL LISTS TO LOAD COMPILER, KEDITN AND WRITE
 2263 * TRACE LIST TO VIRTUAL MEMORY ARE AT THE END OF THE EXECUTABLE
 2264 * CODE.
 2265 *
 2266 *ATTRIBUTES
 2267 * RELOCATABLE
 2268 *
 2269 *CHARACTER CODE DEPENDENCY
 2270 * THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR
 2271 * INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.
 2272 *
 2273 *NOTES
 2274 * ERROR PROCEDURES
 2275 * EXIT IS MADE TO THE ERROR PGM FOR THE FOLLOWING CONDITIONS:
 2276 * * INVALID PARAMETER
 2277 * * NO WORK FILE DEFINED
 2278 * * EMPTY WORK FILE
 2279 * * DATA WORK FILE IN WORK AREA
 2280 * * INVALID SECONDARY PARAMETER
 2281 * * INVALID BASIC IDENTIFIER
 2282 * * REPETITION OF KEYWORD PARAMETERS
 2283 * * INVALID SUBSCRIPTS
 2284 *
 2285 * REGISTER USAGE
 2286 * INDEX REGISTER 1 (@BR) AND REGISTER 2 (@XR) ARE USED.
 2287 *
 2288 * SAVED/RESTORED AREAS
 2289 * NONE
 2290 *
 2291 * MODIFICATION CONSIDERATIONS
 2292 * NONE
 2293 *
 2294 * REQUIRED MODULES
 2295 * @SYSEQ - COMMON SYSTEM EQUATES
 2296 * @HDWEQ - SYSTEM HARDWARE EQUATES
 2297 * @FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATOR VALUE EQUATES
 2298 * @CANEQ - SYSTEM LOCATION EQUATES
 2299 * @DIREQ - FILE LIBRARY EQUATES
 2300 * SCANIT - BLANK SCAN ROUTINE
 2301 *
 2302 * OTHER
 2303 * NONE
 2304 ****

0C07 2306 KRUNIT EQU *

0C07 3B 10 03D1	2307 SBF \$XIND2,\$ABORT	SET OFF 'ABOPT' BIT
0C0B C2 01 0E67	2308 KRU100 LA KRUVM, @BR	POINT BR TO ORIGIN
	2309 USING KRUVM, @BR	BASE REGISTER DISPLACEMENT
0C0F 3C 00 06FF	2310 MVI KRUIDR, @ZERO	INIT TEMP PRIMARY EXEC INDR
	2311 *	
	2312 *	DETERMINE IF RUN, STEP OR TRACE COMMAND
	2313 *	
0C13 35 02 03C7	2314 KRU110 L \$XRSAV, @XR	XR POINTS TO CHARACTER

#KRUNI - KEYWORD COMMAND RUN

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15	MOD	00	03/07/20	PAGE	6
0C17	76 02 19			2315	A	KRUCSO(,@BR),@XR	DECREMENT XR BY 1							
0C1A	9D 02 00	1C		2316	CLC	@ZERO(KRULG1-KRULGO ,@XR),KRURUN(,@BR)	COMMAND = 'RUN' ?							
0C1E	F2 01 07			2317	JNE	KRU120	JUMP IF NOT RUN							
0C21	3A 01 06FF			2318	SBN	KRUIDR,\$RUNIT	SET ON RUN INDICATOR							
0C25	F2 87 0B			2319	J	KRU130	JUMP TO CHECK SECONDARY							
			*	2320	*		* PARAMETER LIST							
0C28	9D 03 00	20		2321	KRU120	CLC	@ZERO(KRULG2-KRULG1 ,@XR),KRUSTP(,@BR)	COMMAND = 'STEP' ?						
0C2C	F2 01 7A			2322	JNE	KRU180	JUMP AND PROCESS TRACE COMMAND							
0C2F	3A 02 06FF			2323	SBN	KRUIDR,\$STEPT	SET ON STEP INDICATOR							
			*	2324	*									
			*	2325	*		ANALYZE SECONDARY PARAMETERS AND DELIMITERS							
			*	2326	*									
0C33	E2 02 01			2327	KRU130	LA	KRUONE(,@XR),@XR	INCREMENT XR POINTER BY 1						
0C36	C0 87 0E21			2328	B	KRU500	BRANCH TO CHECK PARAMETERS							
0C3A	F2 01 0A			2329	JNE	KRU145	JUMP IF EOS							
0C3D	C0 87 0E9C			2330	KRU140	B	SCANIT	SCAN TO NON-BLANK						
0C41	BD 1E 00			2331	CLI	@ZERO(,@XR),@EOS	CHARACTER = EOS ?							
0C44	F2 01 58			2332	JNE	KRU170	JUMP IF NOT EOS							
			*	2333	*									
			*	2334	*		VERIFY WORK FILE STATUS							
			*	2335	*									
0C47	D2 02 00			2336	KRU145	LA	@ZERO(,@BR),@XR	POINT XR OUT OF INPUT BUFFER						
0C4A	38 40 0443			2337	TBN	\$WFNME,\$WFDEF	TEST IF WORK FILE DEFINED							
0C4E	F2 10 07			2338	JT	KRU146	JUMP IF DEFINED							
0C51	3C 2A 03CD			2339	MVI	\$CAERR,@@E220	MOVE ERROR CODE							
0C55	F2 87 27			2340	J	KRU155	JUMP TO ERROR PROGRAM							
0C58	39 04 03D4			2341	KRU146	TBF	\$INDR1,\$WSIND	CHECK IF \$WIND ON						
0C5C	F2 10 07			2342	JT	KRU148	JUMP IF WORK FILE DEFINED							
0C5F	3C 2F 03CD			2343	MVI	\$CAERR,@@E226	MOVE INVALID CODE TO ERROR							
			*	2344	*		* PROGRAM							
0C63	F2 87 19			2345	J	KRU155	JUMP TO ERROR PROGRAM							
0C66	38 80 03D4			2346	KRU148	TBN	\$INDR1,\$BASIC	BASIC PROGRAM ?						
0C6A	F2 10 07			2347	JT	KRU150	YES							
0C6D	3C 30 03CD			2348	MVI	\$CAERR,@@E227	MOVE ERROR CODE							
0C71	F2 87 0B			2349	J	KRU155	GO TO ERROR PRGM							
0C74	39 20 03D4			2350	KRU150	TBF	\$INDR1,\$PGMDT	TEST IF \$PGMDT OFF						
0C78	F2 10 08			2351	JT	KRU160	JUMP IF \$FLTYP OFF							
0C7B	3C 30 03CD			2352	MVI	\$CAERR,@@E227	MOVE ERROR CODE							
0C7F	C0 87 0469			2353	KRU155	B	\$CAERK	BRANCH TO ERROR PROGRAM						
0C83	3B 80 06FF			2354	KRU160	SBF	KRUIDR,KRUFLG	SET '\$' INDR OFF						
0C87	OC 00 03D8	03D0		2355	MVC	\$XIND3(KRUONE),\$XIND1	SAVE PRIMARY EXECUTION INDR							
0C8D	OC 00 03D0	06FF		2356	MVC	\$XIND1(KRUONE),KRUIDR	MOVE TEMP PRIMARY EXEC INDR							
			*	2357	*									
			*	2358	*		LOAD COMPILER AND EXECUTE PROGRAM							
			*	2359	*									
0C93	C0 87 0025			2360	*	DISK	KRUPIM	PRIME COMPILER						
0C97	OE79			2361	B	\$DISKN	PERFORM PHYSICAL DISK OP							
				0C98	2362	DC	AL2(KRUPIM)	DPL ADDRESS						
							*** END OF EXPANSION ***							
0C99	C0 87 051E			2363										
0C9D	OE6D			2364	B	\$RLOAD	LOAD COMPILER AND EXECUTE							
				0C9E	2365	DC	AL2(KRUCPL)	DPL OF PARAMETER LIST						
			*	2366	*									
			*	2367	*		LOAD KEDIIN AND EXECUTE PROGRAM							
			*	2368	*									
0C9F	3A 80 06FF			2369	KRU170	SBN	\$\$XIND,\$EDRUN	SIT \$EDRUN ON						
0CA3	C0 87 051E			2370	B	\$RLOAD	LOAD KEDITN AND EXECUTE							

#KRUNI - KEYWORD COMMAND RUN

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15	MOD	00	03/07/20	PAGE	7
				0CA8	2371	DC	AL2(KRUEDT)						DPL OF PARAMETER LIST	
					2372 *									
					2373 *								PROCESS 'TRACE' COMMAND	
					2374 *									
0CA7	0E73			2375	KRU180	LA	KRUONE(,@XR),@XR						INCREMENT XR POINTER BY 1	
0CAC	3A 04 06FF			2376		SBN	KRUIDR,\$TRACE						SET TRACE INDR ON	
					2377 *									
					2378 *								ANALYZE SECONDARY PARAMETERS AND DELIMITERS	
					2379 *									
0CB0	C0 87 0E21			2380		B	KRU500						CHECK SECONDARY PARAMETERS	
0CB4	F2 81 10			2381		JE	KRU190						JUMP IF BLANK CHARACTER	
0CB7	3A 10 06FF			2382		SBN	KRUIDR,\$TRALL						SET ON ALL INDR	
0CBB	C0 87 0C47			2383		B	KRU145						BRANCH TO LOAD COMPILER	
0CBF	3C 11 03CD			2384	KRU185	MVI	\$CAERR,@@E131						MOVE ERROR CODE	
0CC3	C0 87 0469			2385		B	\$CAERK						BRANCH TO ERROR PROGRAM	
0CC7	C0 87 0E9C			2386	KRU190	B	SCANIT						SCAN TO NON-BLANK	
0CCB	C0 87 0DFE			2387	KRU195	B	KRU400						CHARACTER AN ALPHA ?	
0CCF	F2 84 07			2388		JH	KRU196						JUMP IF NUMERIC	
0CD2	34 02 0D39			2389		ST	KRU265+@OP1,@XR						SAVE XR FOR ERROR	
0CD6	F2 87 08			2390		J	KRU197							
0CD9	3C 1B 03CD			2391	KRU196	MVI	\$CAERR,@@E150						MOVE ERROR CODE	
0CDD	C0 87 0469			2392		B	\$CAERK						BRANCH TO ERROR PGM	

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			2394 *				
			2395 *	CHECK FOR 'ALL' AND 'FLOW' PARAMETERS			
			2396 *				
0CE1	9D 02 02 2E		2397 KRU197 CLC	KRULG5-KRULG4-1(KRULG5-KRULG4,@XR),KRUALL(,@BR)			
			2398 *	* PARAMETER = 'ALL'			
0CE5	F2 81 19		2399 JE	KRU230	JUMP IF 'ALL'		
0CE8	9D 03 03 32		2400 CLC	KRULG6-KRULG5-1(KRULG6-KRULG5,@XR),KRUFLW(,@BR)			
			2401 *	* PARAMETER = 'FLOW' ?			
0CEC	F2 01 64		2402 JNE	KRU290	JUMP IF NOT 'FLOW'		
0CEF	39 28 06FF		2403 KRU200 TBF	KRUIDR,\$TRVAR+\$TFLW	\$TRVAR OR \$TFLW SET ?		
0CF3	C0 90 0D08		2404 BF	KRU235	BRANCH IF EITHER SET		
0CF7	3A 08 06FF		2405 KRU210 SBN	KRUIDR,\$TFLW	SET \$TFLW ON		
0CFB	E2 02 04		2406 KRU220 LA	KRULG6-KRULG5(,@XR),@XR	INCREMENT XR BY 'FLOW'		
0CFE	F2 87 16		2407 J	KRU250	JUMP TO SCAN NON-BLANK		
0D01	39 30 06FF		2408 KRU230 TBF	KRUIDR,\$TRVAR+\$TRALL	\$TRVAR OR \$TRALL SET ?		
0D05	F2 10 08		2409 JT	KRU240	BRANCH IF EITHER SET		
0D08	3C 13 03CD		2410 KRU235 MVI	\$CAERR,@@E134	MOVE ERROR CODE		
0D0C	C0 87 0469		2411 B	\$CAERK	BRANCH TO ERROR PGM		
0D10	3A 10 06FF		2412 KRU240 SBN	KRUIDR,\$TRALL	SET STRALL ON		
0D14	E2 02 03		2413 LA	KRULG5-KRULG4(,@XR),@XR	INCREMENT XR BY 'ALL'		
0D17	3C 01 0EB9		2414 KRU250 MVI	SCAMMA,SCACOM	SET TO IGNORE ONE COMMA		
0D1B	C0 87 0E9C		2415 B	SCANIT	SCAN TO NON-BLANK		
0D1F	F2 81 07		2416 JZ	KRU260	JUMP IF POINTER NOT MOVED		
0D22	BD 1E 00		2417 CLI	@ZERO(,@XR),@EOS	CHARACTER = EOS ?		
0D25	C0 01 OCCB		2418 BNE	KRU195	JUMP IF NOT E05 AND PROCESS		
			2419 *	* ERROR CONDITION			
0D29	BD 1E 00		2420 KRU260 CLI	@ZERO(,@XR),@EOS	CHARACTER = EOS ?		
0D2C	F2 81 13		2421 JE	KRU270	JUMP IF OS		
0D2F	38 20 06FF		2422 TBN	KRUIDR,\$TRVAR	TRACE LIST INDR ON ?		
0D33	F2 10 08		2423 JT	KRU267	JUMP IF TRACE VARIABLES		
0D36	C2 02 0000		2424 KRU265 LA	*-* ,@XR	RESTORE BR		
0D3A	C0 87 0CBF		2425 B	KRU185	BRANCH TO ERROR PGM		
0D3E	C0 87 0CD9		2426 KRU267 B	KRU196	BRANCH TO ERROR PGM		

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			2428 *				
			2429 *		ANALYZE 'TRACE' VARIABLE LIST		
			2430 *				
0D42	38 20 06FF		2431 KRU270 TBN	KRUIDR,\$TRVAR	\$TRVAR SET ON ?		
0D46	F2 90 06		2432 JF	KRU280	JUMP IF \$TRVAR OFF		
			2433 *				
			2434 *		WRITE 'TRACE' VARIABLE LIST TO VIRTUAL MEMORY		
			2435 *				
0D49	C0 87 0025		2436 B	\$DISKN	WRITE VARIABLE LIST TO DISK		
0D4D	0E67	0D4E	2437 DC	AL2(KRUVMM)	DPL OF PARAMETER LIST		
0D4F	C0 87 0C47		2438 KRU280 B	KRU145	JUMP & EXEC PROGRAM IN WORK FILE		
			2439 *				
			2440 *		ANALYZE 'TRACE' PARAMETERS		
			2441 *				
0D53	38 20 06FF		2442 KRU290 TBN	KRUIDR,\$TRVAR	\$TRVAR SET ON ?		
0D57	F2 10 0E		2443 JT	KRU300	JUMP IF \$TRVAR ON		
0D5A	34 02 0601		2444 ST	\$\$ILEN,@XR	STORE XR IN INPUT HEADER		
0D5E	0F 01 0601 0E6C		2445 SLC	\$\$ILEN(@CADDR),KRUSRT	CALCULATE RELATIVE DISP		
0D64	3A 20 06FF		2446 SBN	KRUIDR,\$TRVAR	SET \$TRVAR ON		
0D68	E2 02 01		2447 KRU300 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0D6B	C0 87 0DFE		2448 B	KRU400	CHARACTER NUMERIC ?		
0D6F	F2 04 06		2449 JNH	KRU310	JUMP IF NON-NUMERIC		
0D72	E2 02 01		2450 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0D75	F2 87 42		2451 J	KRU335	BRANCH TO SCAN NON-BLANK		
0D78	BD 5B 00		2452 KRU310 CLI	@ZERO(,@XR),KRUDOL	CHARACTER = '\$' ?		
0D7B	F2 81 0C		2453 JE	KRU315	JUMP IF \$		
0D7E	BD 7C 00		2454 CLI	@ZERO(,@XR),KRUATT	'@' ?		
0D81	F2 81 06		2455 JE	KRU315	JUMP IF YES		
0D84	BD 7B 00		2456 CLI	@ZERO(,@XR),KRUPND	'#' ?		
0D87	F2 01 07		2457 JNE	KRU320	JUMP IF NOT '('		
0D8A	E2 02 01		2458 KRU315 LA	KRUONE(,@XR),@XR	UPDATE OR BY 1		
0D8D	3A 80 06FF		2459 SBN	KRUIDR,KRUFLG	SET ON 'S' INDICATOR		
0D91	BD 4D 00		2460 KRU320 CLI	@ZERO(,@XR),KRUBRC	CHARACTER = '(' ?		
0D94	F2 01 1F		2461 JNE	KRU330	JUMP IF NOT '('		
0D97	E2 02 01		2462 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0D9A	C0 87 0DFE		2463 B	KRU400	CHARACTER NUMERIC ?		
0D9E	F2 84 1D		2464 JH	KRU337	JUMP IF NUMERIC		
0DA1	9D 01 01 34		2465 CLC	KRULG7-KRULG6-1(KRULG7-KRULG6,@XR),KRUVAR(,@BR)			
			2466 *		* CHARACTERS = '*' ?		
0DA5	F2 81 08		2467 JE	KRU323	JUMP IF '*'		
0DA8	3C 1C 03CD		2468 KRU322 MVI	\$CAERR,@@E151	MOVE ERROR CODE		
0DAC	C0 87 0469		2469 B	\$CAERK	BRANCH TO ERROR PGM		
0DB0	E2 02 01		2470 KRU323 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0DB3	E2 02 01		2471 KRU325 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0DB6	3B 80 06FF		2472 KRU330 SBF	KRUIDR,KRUFLG	TURN OFF '\$' INDICATOR		
0DBA	C0 87 0D17		2473 KRU335 B	KRU250	BRANCH TO SCAN NON-BLANK		
0DBE	76 02 19		2474 KRU337 A	KRUCSO(,@BR),@XR			
0DC1	E2 02 02		2475 KRU340 LA	KRUTWO(,@XR),@XR	INCREMENT XR BY 2		
0DC4	C0 87 0DFE		2476 KRU345 B	KRU400	CHARACTER NUMERIC ?		
0DC8	F2 04 07		2477 JNH	KRU350	JUMP IF NOT NUMERIC		
0DCB	E2 02 01		2478 LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1		
0DCE	C0 87 0DC4		2479 B	KRU345	RETURN TO CHECK IF NUMERIC		
0DD2	BD 5D 00		2480 KRU350 CLI	@ZERO(,@XR),KRUDET	CHARACTER = ')' ?		
0DD5	C0 81 0DB3		2481 BE	KRU325	BRANCH IF YES		
0DD9	BD 68 00		2482 CLI	@ZERO(,@XR),KRUCOM	CHARACTER = ',', ?		
0DDC	C0 01 0DA8		2483 BNE	KRU322	BRANCH IF NOT		

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0DE0 38 80 06FF	2484	TBN	KRUIDR,KRUFLG	IS '\$' INDR SET ?
0DE4 C0 10 0DA8	2485	BT	KRU322	BRANCH TO TO ERROR PGM
0DE8 E2 02 01	2486	LA	KRUONE(,@XR),@XR	INCREMENT XR BY 1
0DEB C0 87 0DFE	2487	B	KRU400	CHARACTER NUMERIC ?
0DEF C0 04 0DA8	2488	BNH	KRU322	BRANCH IF NOT NUMERIC
0DF3 3A 80 06FF	2489	SBN	KRUIDR,KRUFLG	TURN ON '\$' INDR
0DF7 76 02 19	2490	A	KRUCSO(,@BR),@XR	DECREMENT XR BY 1
0DFA C0 87 0DC1	2491	B	KRU340	BRANCH TO CHECK IF NUMERIC
	2492 *			
	2493 *			ROUTINE CHECKS CHARACTER REFERENCED BY
	2494 *			XR TO DETERMINE IF ALPHA OR NUMERIC
	2495 *			EXIT: PSR REGISTER INDICATES TYPE OF CHARACTER
	2496 *			1. LOW - ALPHA
	2497 *			2. HIGH - NUMERIC
	2498 *			3. EQUAL - NON - ALPHA/NUMERIC
	2499 *			
0DFE 34 08 0E20	2500	KRU400	EQU *	
	2501	ST	KRU440+@OP1,@ARR	SAVE ARR FOR RETURN
0E02 BD C1 00	2502	CLI	@ZERO(,@XR),KRUALL1	CHECK ALPHA LOWER BOUND
0E05 F2 82 12	2503	JL	KRU430	JUMP IF NON-ALPHA/NUMERIC
0E08 BD EA 00	2504	CLI	@ZERO(,@XR),KRUALL2	CHECK ALPHA UPPER BOUND
0E0B F2 82 0F	2505	JL	KRU440	JUMP IF ALPHA CHARACTER
0E0E BD F9 00	2506	KRU420	CLI @ZERO(,@XR),KRUNU2	CHECK NUMERIC UPPER BOUND
0E11 F2 84 06	2507	JH	KRU430	JUMP IF NON-ALPHA/NUMERIC
0E14 BD EF 00	2508	CLI	@ZERO(,@XR),KRUNU1	CHECK NUMERIC LOWER BOUND
0E17 F2 84 03	2509	JH	KRU440	JUMP IF NUMERIC CHARACTER
0E1A 7D 5D 34	2510	KRU430	CLI KRUVAR(,@BR),KRUSET	FORCE PSR TO NON-ALPHA/NUMERIC
0E1D C0 87 0000	2511	KRU440	B *-*	RETURN TO CALLER
	2513 *			
	2514 *			CHECK FOR '-LONG' OR '-SHORT' AND SET APPROPRIATE
	2515 *			INDICATORS IF FOUND
	2516 *			CHECK FOR BLANK AND EOS AS DELIMITERS
	2517 *			EXIT: PSR REGISTER INDICATES
	2518 *			DELIMETER FOUND
	2519 *			1. EQUAL - BLANK DELIMETER
	2520 *			2. NOT EQUAL - EOS DELIMETER
	2521 *			NOTE: IF NEITHER DELIMETER IS FOUND A
	2522 *			BRANCH IS MADE TO THE ERROR PROGRAM
	2523 *			
0E21 34 08 0E66	2524	KRU500	EQU *	
	2525	ST	KRU550+@OP1,@ARR	SAVE ARR FOR RETURN
0E25 34 02 0E54	2526	ST	KRU533+@OP1,@XR	SAVE XR FOR EXIT
0E29 9D 04 04 25	2527	CLC	KRULG3-KRULG2-1(KRULG3-KRULG2,@XR),KRULNG(,@BR)	
	2528 *			* CHECK FOR '-LONG'
0E2D F2 01 07	2529	JNE	KRU510	JUMP IF NOT
0E30 3A 40 06FF	2530	SBN	KRUIDR,\$XPREC	SET \$XPREC ON
0E34 E2 02 05	2531	LA	KRULG3-KRULG2(,@XR),@XR	INCREMENT XR BY '-LONG'
0E37 9D 05 05 2B	2532	KRU510	CLC KRULG4-KRULG3-1(KRULG4-KRULG3,@XR),KRUSHT(,@BR)	
	2533 *			* CHECK FOR '-SHORT'
0E3B F2 01 03	2534	JNE	KRU530	JUMP IF NOT
0E3E E2 02 06	2535	KRU520	LA KRULG4-KRULG3(,@XR),@XR	INCREMENT XR BY '-SHORT'
0E41 BD 40 00	2536	KRU530	CLI @ZERO(,@XR),@BLANK	DELIMETER A BLANK ?
0E44 F2 81 1C	2537	JE	KRU550	JUMP IF BLANK CHARACTER
0E47 C0 87 0E9C	2538	B	SCANIT	SCAN ACROSS BLANKS
0E4B BD 1E 00	2539	CLI	@ZERO(,@XR),@EOS	DELIMETER = EOS

#KRUNI - KEYWORD COMMAND RUN

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/07/20	PAGE 11
0E4E	F2 81 0F		2540	JE	KRU540			JUMP IF EUS	
0E51	C2 02 0000		2541	KRU533	LA	*-* ,@XR		RESTORE XR	
0E55	E2 02 01		2542		LA	KRUONE(,@XR) ,@XR		BUMP XR BY 1	
0E58	3C 1A 03CD		2543	KRU535	MVI	\$CAERR ,@@E143		MOVE ERROR CODE	
0E5C	C0 87 0469		2544	KRU536	B	\$CAERK		BRANCH TO ERROR PROGRAM	
0E60	BD 40 00		2545	KRU540	CLI	@ZERO(,@XR) ,@BLANK		FORCE PSR NOT EQUAL	
0E63	C0 87 0000		2546	KRU550	B	*-*		RETURN TO CALLER	
			2547	*					
			2548	*		PARAMETER LIST TO WRITE 'TRACE' VARIABLE LIST			
			2549	*		TO VIRTUAL MEMORY			
			2550	*					
0E67	02	0E67	2551	KRUVMM	DC	AL1(@DPUT)		WRITE FUNCTION	
0E68	07	0E68	2552		DC	AL1(@DVBCY)		BASE CYL ADDRESS	
0E69	B1	0E69	2553		DC	XL1'B1'		TRACE RCF LIST PAGE DISP	
0E6A	01	0E6A	2554		DC	AL1(KRUONE)		SECTOR COUNT	
0E6B	0600	0E6C	2555	KRUSRT	DC	AL2(\$\$ILHD)		DATA ADDRESS	
			2556	*					
			2557	*		PARAMETER LIST TO LOAD COMPILER			
			2558	*					
0E6D	01	0E6D	2559	KRUCPL	DC	AL1(@DGET)		READ FUNCTION	
0E6E	0080	0E6F	2560		DC	AL2(\$\$BCOM)		DISK ADDRESS	
0E70	18	0E70	2561		DC	AL1(\$\$@BCO)		SECTOR COUNT	
0E71	0600	0E72	2562		DC	AL2(\$\$KLD1)		DATA ADDRESS	
			2563	*					
			2564	*		PARAMETER LIST TO LOAD KEDITN			
			2565	*					
0E73	01	0E73	2566	KRUEDT	DC	AL1(@DGET)		READ FUNCTION	
0E74	0188	0E75	2567		DC	AL2(\$\$KEDI)		DISK ADDRESS	
0E76	0E	0E76	2568		DC	AL1(\$\$@KED)		SECTOR COUNT	
0E77	0C00	0E78	2569		DC	AL2(\$\$KLD3)		DATA ADDRESS	
			2570	*					
			2571	*		PARAMETER LIST TO PRIME COMPILER			
			2572	*					
			2573	*RUPIM \$DPL		FUNC-@DGET,DADDR-#@#IO1,CNT-#@#IO,CADDR-B\$PTBF			
			0E79	2574+KRUPIM	EQU	*		DISK PARAMETER LIST	
0E79	01	0E79	2575+		DC	AL1(@DGET)		REQUESTED FUNCTION	
0E7A	0459	0E7B	2576+		DC	AL2(\$@#IO1)		DISK ADDRESS	
0E7C	01	0E7C	2577+		DC	AL1(\$@#IO)		SECTOR COUNT	
0E7D	1F00	0E7E	2578+		DC	AL2(B\$PTBF)		BUFFER ADDRESS	
			2579+***	END OF EXPANSION ***					
			2580	*					
			2581	*		CONSTANTS USED IN KRUNIT			
			2582	*					
0E7F	FFFF	0E80	2583	KRUCSO	DC	IL(@CADDR) '-1'		DECIMENTATION FACTOR	
			2584	*					
			2585	*		PRIMARY / SECONDARY PARAMETERS USED IN KRUNIT			
			2586	*					
			0E81	2587	KRULGO	EQU	*		
0E81	D9E4D5	0E83	2588	KRURUN	DC	CL3'RUN'			
0E84	E2E3C5D7	0E84	2589	KRULG1	EQU	*			
0E87	2590	KRUSTP	DC	CL4'STEP'					
0E88	2591	KRULG2	EQU	*					
0E8C	2592	KRULNG	DC	CL5'-LONG'					
0E8D	2593	KRULG3	EQU	*					
0E8D	60E2C8D6D9E3	0E92	2594	KRUSHT	DC	CL6'-SHORT'			
		0E93	2595	KRULG4	EQU	*			

#KRUNI - KEYWORD COMMAND RUN

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15	MOD	00	03/07/20	PAGE	12	
				0E93	C1D3D3	0E95	2596	KRUALL	DC	CL3	'ALL'				
						0E96	2597	KRULG5	EQU	*					
				0E96	C6D3D6E6	0E99	2598	KRUFLOW	DC	CL4	'FLOW'				
						0E9A	2599	KRULG6	EQU	*					
				0E9A	5C5D	0E9B	2600	KRUVAR	DC	CL2	'*')'	(*) IS THE FLAG TO TRACE			
						2601	*					ALL REFERENCES TO THE VARIABLE			
				0E9C		2602	KRULG7	EQU	*						
						2603	*								
						2604	*					EQUATES USED IN KRUNIT			
						2605	*								
				00C1		2606	KRUAL1	EQU	X'C1'			EBCDIC	'A'		
				00EA		2607	KRUAL2	EQU	X'EA'			EBCDIC	'Z' PLUS 1		
				00EF		2608	KRUNU1	EQU	X'EF'			EBCDIC	'0' MINUS 1		
				00F9		2609	KRUNU2	EQU	X'F9'			EBCDIC	'9'		
				005B		2610	KRUDOL	EQU	X'5B'			EBCDIC	'\$'		
				004D		2611	KRUBRC	EQU	X'4D'			EBCDIC	'('		
				005D		2612	KRUDET	EQU	X'5D'			EBCDIC	')'		
				007C		2613	KRUATT	EQU	X'7C'			@ SIGN			
				007B		2614	KRUPND	EQU	X'7B'			# SIGN			
				0068		2615	KRUCOM	EQU	X'68'			EBCDIC	'.'		
				0080		2616	\$EDRUN	EQU	\$\$\$\$ERN			'RUN' FUNC SAVE FILE INDR			
				0080		2617	KRUFLG	EQU	\$EDRUN			\$ INDICATOR			
				06FF		2618	KRUIDR	EQU	\$\$XIND			'RUN' INDICATOR			
				0001		2619	KRUONE	EQU	1			INCREMENTATION FACTOR OF 1			
				0002		2620	KRUTWO	EQU	2			INCREMENTATION FACTOR OF 2			
				0004		2621	KRUFOR	EQU	4			LOGICAL CYL DISPLACEMENT			
						2622	*		\$CANI						

SCANIT - DELIMETER SCAN MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/07/20 PAGE 13

```
2624+*****  
2625+* 5703-XM1 COPYRIGHT IBM CORP. 1970 *  
2626+* REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083 *  
2627+*  
2628+*****  
2629+*STATUS  
2630+* VERSION 1 MODIFICATION 0 *  
2631+*  
2632+*FUNCTION  
2633+* THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND *  
2634+* RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER. *  
2635+*  
2636+*ENTRY POINTS  
2637+* * THE ENTRY POINT IS SCANIT. *  
2638+* * THE CALLING SEQUENCE IS AS FOLLOWS:  
2639+* B SCANIT  
2640+* WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE *  
2641+* EXAMINED.  
2642+*  
2643+*INPUT  
2644+* NONE  
2645+*  
2646+*OUTPUT  
2647+* NONE  
2648+*  
2649+*EXTERNAL REFERENCES  
2650+* $CAERR - ERROR CODE SAVE AREA *  
2651+*  
2652+*EXITS, NORMAL  
2653+* NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO *  
2654+* SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN *  
2655+* A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR *  
2656+* MORE DELIMITERS WERE SCANNED.  
2657+*  
2658+*EXITS, ERROR  
2659+* ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO *  
2660+* SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW *  
2661+* CONDITION.  
2662+*  
2663+*TABLES/WORKAREAS  
2664+* * SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED *  
2665+* * SCAMMA - LOCATION WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO*  
2666+* TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA *  
2667+* INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS. *  
2668+*  
2669+*ATTRIBUTES  
2670+* RELOCATABLE AND RE-USABLE *  
2671+*  
2672+*CHARACTER CODE DEPENDENCY  
2673+* THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR *  
2674+* INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET. *  
2675+*  
2676+*NOTES  
2677+*ERROR PROCEDURES  
2678+* THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE *  
2679+* 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 03/07/20 PAGE 14

2680+* CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE *
 2681+* ERROR CODE IS SET IN \$CAERR, AND MG WU BE POINTING TO THE *
 2682+* CARRIAGE-RETURN CHARACTER. *
 2683+* *
 2684+* REGISTER USAGE *
 2685+* REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING *
 2686+* SCANNED FOR DELIMITERS. *
 2687+* *
 2688+* SAVED/RESTORED AREAS *
 2689+* UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS *
 2690+* THE RETURN ADDRESS. *
 2691+* *
 2692+* MODIFICATION CONSIDERATIONS *
 2693+* NONE *
 2694+* *
 2695+* REQUIRED MODULES *
 2696+* * @SYSEQ - COMMON SYSTEM EQUATES *
 2697+* * @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES *
 2698+* *
 2699+* OTHER *
 2700+* SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS *
 2701+* MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS. *
 2702+* THE INSTRUCTION TO DO THIS IS AS FOLLOWS: *
 2703+* MVI SCAMMA,SCACOM *
 2704+* *
 2705+* TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE *
 2706+* MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION: *
 2707+* MVI SCAMMA,SCACOF *
 2708+*****

2710+* *
 2711+* EQUATES USED IN THIS SUBROUTINE
 2712+* *

	0001	2713+SCAINC	EQU	1	TO INCREMENT POINTER
	0001	2714+SCACOM	EQU	@BNE	SWITCH TO ALLOW SCANNING COMMA
	0087	2715+SCACOF	EQU	@UCB	SWITCH TO SET OFF THE INDICATOR
		2716+*			* FOR SCANNING A COMMA
	0E9C	2717+SCANIT	EQU	*	ENTRY POINT TO THIS SUBROUTINE
0E9C 34 08 0ED8		2718+	ST	SCA500+@OP1,@ARR	SAVE RETURN ADDRESS
0EA0 34 02 0EDA		2719+	ST	SCASVE,@XR	SAVE POINTER VALUE
0EA4 3C 04 03CD		2720+	MVI	\$CAERR,@@E110	SET ERROR CODE
0EA8 F2 87 03		2721+	J	SCA200	GO TO PROCESS
0EAB E2 02 01		2722+SCA100	LA	SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR
0EAE BD 40 00		2723+SCA200	CLI	0(,@XR),@BLANK	IS THIS CHAR BLANK ?
0EB1 C0 81 0EAB		2724+	BE	SCA100	YES, FETCH NEXT ONE
0EB5 BD 6B 00		2725+	CLI	0(,@XR),@COMMA	IS IT A COMMA ?
0EB8 F2 87 10		2726+SCA250	JC	SCA400,@UCB	UCS TO RETURN -- OR NOP IF
		2727+*			* SCAMMA IS ACTIVE AND CHAR
0EBB E2 02 01		2728+SCA300	LA	SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR
0EBE BD 40 00		2729+	CLI	0(,@XR),@BLANK	IS THIS CHAR A BLANK ?
0EC1 C0 81 0EBB		2730+	BE	SCA300	YES, FETCH NEXT ONE
0EC5 BD 1F 00		2731+	CLI	0(,@XR),@EOS+1	IS THIS EOS ?
0EC8 F2 82 0A		2732+	JL	SCA500	IF NOT, SKIP ERROR ROUTINE
0ECB 34 02 0EDC		2733+SCA400	ST	SCACNT,@XR	SAVE NEW POINTER VALUE
0ECF 0F 01 0EDC 0EDA		2734+	SLC	SCACNT(2),SCASVE	SET PSR TO EQUAL IF POINTER

SCANIT - DELIMETER SCAN MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/07/20 PAGE 15

0ED5 C0 87 0000 2735+* * NOT ADVANCED
2736+SCA500 B *-* YES, RETURN
0EB9 2737+SCAMMA EQU SCA250+@Q TO SET SCAN COMMA INDICATOR

2738+*
2739+* SAVE AREA
2740+*

0ED9 0ED9 2741+SCASV1 EQU * FIRST BYTE OF SCASVE
0EDA 2742+SCASVE DS CL2 ORIGINAL POINTER VALUE SAVE
0EDC 2743+SCACNT DS CL2 SAVE AREA FOR TOTAL CHAR SCAN
2744+*** END OF SCANIT ***

SCANIT - DELIMETER SCAN MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/07/20 PAGE 16

		2746 ****			
		2747 * PATCH .1			
		2748 ****			
		2749 *			
		2750 * CALCULATE AREA LEFT IN THIS SECTOR			
		2751 *			
0F00	0EDD	2752 \$\$\$\$L1 EQU *			START OF PATCH AREA 1
		2753 ORG *,256,0			SET LOC CNTR TO NEXT SECTOR
	0F00	2754 \$\$\$\$T1 EQU *			DEFINE ADDR OF SCTR BOUNDARY
0EDD		2755 ORG \$\$\$\$L1			SET LOC CNTR TO START OF
		2756 *			* PATCH AREA
0EDD	0EFF	2757\$\$\$\$\$1 DS CL(\$\$\$\$T1-\$\$\$\$L1)			PATCH AREA
		2758 ****			
		2759 *** END OF EXPANSION ***			
		2760 PRINT ON			
	FFFF	2761 END			

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER	15	MOD	00	03/07/20	PAGE	17
\$\$\$\$\$\$	001	0C00	2197								
\$\$\$\$\$\$1	035	0EFF	2757								
\$\$\$\$L1	001	0EDD	2752	2755 2757							
\$\$\$\$T1	001	0F00	2754	2757							
\$\$\$\$CMD	001	0020	0841								
\$\$\$\$DAT	001	0040	0840								
\$\$\$\$EPL	001	0091	0837								
\$\$\$\$ERN	001	0080	0891	2616							
\$\$\$\$FUN	001	0010	0842								
\$\$\$\$NLN	001	00A0	0887								
\$\$\$\$STD	001	0081	0836								
\$\$BNLN	001	0605	0817	0819							
\$\$CDBS	001	08C0	0867								
\$\$CDND	001	0666	0826								
\$\$CDRD	001	0890	0865	0867							
\$\$CKEY	001	0603	0815								
\$\$CKFF	001	0B3D	0847								
\$\$COFF	001	0B44	0846								
\$\$CSNS	001	209C	0876								
\$\$DATB	001	0BBF	0848								
\$\$EOSA	001	0AFE	0845								
\$\$ERSK	001	1C00	0886								
\$\$FITS	001	1D00	0894								
\$\$FLIB	001	06FF	0893								
\$\$ILEN	001	0601	0811	0813 0817 2444* 2445*							
\$\$ILHD	001	0600	0809	0811 2555							
\$\$INLN	001	0607	0824	0826 0828							
\$\$INND	001	06FA	0828								
\$\$KBDT	001	09E1	0835	0839							
\$\$KBSN	001	09E2	0839	0844							
\$\$KLD1	001	0600	0899	2562							
\$\$KLD2	001	0700	0901								
\$\$KLD3	001	0C00	0903	2569							
\$\$LPOS	001	09EB	0844								
\$\$PCNT	001	07E9	0860								
\$\$PLYN	001	2004	0874								
\$\$PRES	001	0890	0833	0835 0845 0846 0847 0848 0865							
\$\$PRFL	001	2143	0878								
\$\$PRNT	001	0707	0854	0855 0859 0860							
\$\$PRTN	001	0782	0855								
\$\$PSIO	001	07CE	0859								
\$\$PYCD	001	2200	0880								
\$\$PYMP	001	2000	0872	0874 0876 0878 0880							
\$\$SLIB	001	1C00	0889								
\$\$TPCD	001	0606	0819	0824							
\$\$UPAR	001	0602	0813	0815							
\$\$WSPB	001	1E00	0892								
\$\$XIND	001	06FF	0890	0893 2369* 2618							
\$\$ZERO	001	0000	0406	0407 0409 0410 0411 0415 0872							
ABORT	001	0010	0518	2307							
BASIC	001	0080	0576	2346							
BIGCD	001	0080	0652								
BLDPL	001	0579	0785	0787							
BLNOE	001	0569	0775								
BLOAD	001	0522	0766	0768 0771 0784 0785							
BLRTN	001	0550	0774	0775							

CROSS REFERENCE

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES

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\$ERSFL	001	0035	0478	
\$ERSTK	001	0030	0476	
\$ER050	001	0363	0415	
\$ER1N2	001	0050	0481	
\$EXADR	001	0517	0759	0761
\$EXCMD	001	0001	0513	
\$EXFTR	001	043B	0695	0700
\$FCIND	001	0010	0591	
\$FDIND	001	0040	0598	
\$FEARR	001	0004	0407	
\$FEMAP	001	0588	0792	0793
\$FILIB	001	03DA	0642	0643
\$FITIN	001	0010	0567	
\$FUIND	001	0020	0596	
\$GUFIO	001	0583	0789	0790
\$GUFR	001	0008	0441	
\$HISTE	001	042E	0692	0693
\$HIST1	001	0435	0693	0694
\$HRDER	001	0020	0537	
\$INDR1	001	03D4	0553	0579 2341 2346 2350
\$INDR2	001	03D5	0579	0604
\$INDR3	001	03D6	0604	0631
\$INLNO	001	03CF	0471	0473 0485 0492
\$INRPT	001	0020	0449	
\$IOIND	001	03D2	0520	0546
\$IOPGS	001	0010	0660	
\$IOYES	001	0002	0435	
\$IPLDV	001	05FF	0796	0799
\$IRKEY	001	0020	0659	
\$KEYBD	001	03E1	0665	0670
\$KEYCD	001	03C3	0429	0463
\$KEYDT	001	0040	0573	
\$KE090	001	00DE	0410	
\$KE130	001	01D5	0411	
\$KYBSY	001	0010	0446	
\$LDRTN	001	0571	0784	
\$LEVEL	001	03DF	0654	0656
\$LIST	001	0002	0608	
\$LMRGN	001	03C1	0424	0426
\$LNPTR	001	0080	0543	
\$LOADB	001	054A	0768	
\$LOADR	001	051A	0761	0764
\$LPRI0	001	03E9	0678	
\$LPROS	001	03E5	0673	0675
\$LPRP3	001	03E4	0672	0673
\$MOUNT	001	0020	0622	
\$MPDWN	001	0001	0522	
\$NEXTB	001	03E6	0675	0676
\$NEXTL	001	03E7	0676	0677
\$NOENB	001	0008	0614	
\$NOLST	001	0004	0438	
\$NUCBS	001	03C0	0421	0422
\$NWRKF	001	0080	0627	
\$NWRKR	001	0040	0624	
\$PASWD	001	042D	0691	0692
\$PAUSD	001	04BA	0745	0747

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SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER	15	MOD	00	03/07/20	PAGE	20
\$PAUSE	001	0002	0515								
\$PGMDT	001	0020	0570	2350							
\$PGMST	001	0010	0534								
\$PKERT	001	0419	0689	0691							
\$PLST1	001	0454	0710	0711							
\$PLST2	001	045B	0711	0712							
\$PLST3	001	0462	0712	0713							
\$PRDEV	001	044B	0707	0709							
\$PRESN	001	0002	0558								
\$PROCI	001	0001	0555								
\$PRPOS	001	03C2	0426	0429							
\$PSDBR	001	04FA	0750								
\$PSDXR	001	04F2	0749	0750							
\$PSTEP	001	0004	0516								
\$PSTMNT	001	0008	0517								
\$PTCH1	001	03F5	0680	0684							
\$READY	001	0080	0600								
\$REORD	001	0040	0658								
\$RLOAD	001	051E	0764	0766 2364 2370							
\$RMRGN	001	03C0	0422	0424							
\$RSTR	001	04D6	0747	0749 0751 0756							
\$RUNIT	001	0001	0494	2318							
\$SFAID	001	050D	0752								
\$SPRNT	001	0465	0719	0721							
\$SRTRN	001	04FE	0751	0752							
\$STEPT	001	0002	0495	2323							
\$SWPCR	001	0511	0757	0759							
\$TABLN	001	03CB	0466	0469							
\$TFLW	001	0008	0501	2403 2405							
\$TRACE	001	0004	0496	2376							
\$TRALL	001	0010	0502	2382 2408 2412							
\$TROVR	001	054E	0771	0774							
\$TRUNK	001	0080	0454								
\$TRVAR	001	0020	0503	2403 2408 2422 2431 2442 2446							
\$UNMSK	001	048D	0732	0735							
\$USRDR	001	03DC	0643	0644							
\$VMDEF	001	0080	0507								
\$VOLF1	001	03FE	0686	0687							
\$VOLF2	001	040E	0688								
\$VOLID	001	03F6	0684	0685 0689							
\$VOLR1	001	03F6	0685	0686							
\$VOLR2	001	0406	0687	0688							
\$WAITF	001	057F	0787	0789							
\$WFDEF	001	0040	0701	2337							
\$WFLOK	001	0008	0564								
\$WFNME	001	0443	0700	0705 2337							
\$WSIND	001	0004	0561	2341							
\$XIND1	001	03D0	0492	0511 2355 2356*							
\$XIND2	001	03D1	0511	0520 2307*							
\$XIND3	001	03D8	0639	0642 2355*							
\$XPREC	001	0040	0504	2530							
\$XRSAV	001	03C7	0464	0466 2314							
\$ZTRAD	001	05A2	0793								
\$12K	001	0004	0648								
\$16CKY	001	0008	0650								
\$16K	001	0002	0647								

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\$22IMP	001	0001	0645
####BL	001	0000	1424
####CK	001	0000	1552
####CN	001	0000	1520
####CO	001	0000	1312
####CS	001	0000	1372
####DR	001	0000	1116
####ER	001	0000	1316
####FS	001	0000	1412
####IN	001	0000	1556
####PW	001	0000	1560
####RS	001	0000	1392
####SA	001	0000	1380
####SS	001	0000	1376
####VU	001	0600	1336
####OT	001	0700	1108
####1T	001	0000	1112
####BCO	001	0600	1124
####BOV	001	0800	1396
####DPR	001	0700	1132
####DRE	001	0889	1148
####DSP	001	2800	1168
####ECM	001	0C00	1428
####EFK	001	0C00	1448
####ERR	001	0C00	1420
####EXM	001	0C00	1308
####FIL	001	0E00	1388
####FIS	001	0E00	1384
####FML	001	0200	1516
####FMS	001	0200	1356
####GRA	001	0889	1280
####GUF	001	0C00	1416
####INL	001	0600	1496
####INS	001	0600	1120
####KAL	001	0C00	1284
####KCA	001	0C00	1500
####KCH	001	0C00	1252
####KCN	001	0C00	1368
####KCT	001	0C00	1220
####KDE	001	0C00	1216
####KDI	001	0D00	1296
####KDN	001	0C00	1204
####KDO	001	0E00	1300
####KED	001	0C00	1140
####KEN	001	0C00	1144
####KEX	001	0C00	1164
####KGO	001	0C00	1136
####KHE	001	0C00	1320
####KKE	001	0C00	1548
####KLI	001	0C00	1224
####KLL	001	0920	1524
####KLO	001	0C00	1228
####KME	001	0D00	1208
####KMO	001	0C00	1152
####KNA	001	0C00	1264
####KOV	001	0E00	1184

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####KPA	001	0C00	1160	
####KPO	001	0C00	1248	
####KPR	001	0C00	1272	
####KRE	001	0C00	1192	
####KRL	001	0700	1288	
####KRM	001	0C00	1156	
####KRN	001	1000	1176	
####KRO	001	0D00	1180	
####KRS	001	0C00	1504	
####KRU	001	0C00	1200	2196
####KRV	001	0800	1292	
####KSA	001	0C00	1236	
####KSE	001	0E00	1276	
####KSO	001	0C20	1328	
####KSS	001	0C00	1260	
####KSV	001	0980	1256	
####KSY	001	0C00	1268	
####KWI	001	0C00	1196	
####KWR	001	0C00	1188	
####LOA	001	0600	1128	
####MIP	001	0C00	1324	
####SDS	001	0C00	1436	
####SFF	001	0E00	1440	
####SFL	001	0F00	1432	
####SFO	001	1500	1404	
####SFS	001	0C00	1400	
####SPA	001	0C00	1240	
####SPO	001	0806	1244	
####SPS	001	0C00	1232	
####STR	001	1600	1408	
####TDC	001	1000	1212	
####TSY	001	1000	1172	
####TVK	001	0FC0	1348	
####UAL	001	0C00	1364	
####UAT	001	0900	1460	
####UCD	001	0900	1468	
####UCN	001	0C00	1452	
####UCP	001	0700	1456	
####UDE	001	0C00	1472	
####UDI	001	0C00	1476	
####UEX	001	0C00	1360	
####UIN	001	0C00	1464	
####UPA	001	0C00	1444	
####UPO	001	0C00	1512	
####UPT	001	0C00	1508	
####VCR	001	2000	1304	
####VLO	001	0600	1340	
####VOD	001	0600	1344	
####VVM	001	0000	1352	
####VXI	001	0600	1332	
####ZDU	001	1100	1484	
####ZLB	001	1100	1528	
####ZLO	001	1100	1488	
####ZLV	001	0F00	1544	
####ZL1	001	0F00	1532	
####ZL2	001	0F00	1536	

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####ZL3 001 0C00 1540
####ZTR 001 1000 1480
####ZUT 001 0C00 1492
####BLN 001 18D4 1423
####CKT 001 2118 1551
####CNF 001 2000 1519
####COR 001 0800 1311
####CSA 001 1000 1371
####DRT 001 0000 1115
####ERM 001 0928 1315
####FSP 001 1880 1411
####INV 001 212C 1555
####PWR 001 2300 1559
####RSP 001 1780 1391
####SAV 001 1180 1379
####SSA 001 1128 1375
####VUF 001 0B08 1335
####OTR 001 0000 1107
####1TR 001 0080 1111
####@#BL 001 0001 1425
####@#CK 001 0004 1553
####@#CN 001 0001 1521
####@#CO 001 003A 1313
####@#CS 001 003A 1373
####@#DR 001 0008 1117
####@#ER 001 0032 1317
####@#FS 001 0030 1413
####@#IN 001 003A 1557
####@#PW 001 00C0 1561
####@#RS 001 0030 1393
####@#SA 001 0108 1381
####@#SS 001 0001 1377
####@#VU 001 0002 1337
####@#OT 001 0018 1109
####@#1T 001 0018 1113
####@BCO 001 0018 1125 2561
####@BOV 001 0018 1397
####@DPR 001 0005 1133
####@DRE 001 0001 1149
####@DSP 001 0004 1169
####@ECM 001 0006 1429
####@EFK 001 0002 1449
####@ERR 001 0003 1421
####@EXM 001 0003 1309
####@FIL 001 0009 1389
####@FIS 001 0009 1385
####@FML 001 0052 1517
####@FMS 001 0052 1357
####@GRA 001 0003 1281
####@GUF 001 0010 1417
####@INL 001 0010 1497
####@INS 001 0010 1121
####@KAL 001 000F 1285
####@KCA 001 000C 1501
####@KCH 001 000C 1253
####@KCN 001 0010 1369

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#\$@KCT	001	0009	1221	
#\$@KDE	001	0010	1217	
#\$@KDI	001	0005	1297	
#\$@KDN	001	0010	1205	
#\$@KDO	001	000C	1301	
#\$@KED	001	000E	1141	2568
#\$@KEN	001	0006	1145	
#\$@KEX	001	0003	1165	
#\$@KGO	001	0002	1137	
#\$@KHE	001	000C	1321	
#\$@KKE	001	0006	1549	
#\$@KLI	001	0008	1225	
#\$@KLL	001	0001	1525	
#\$@KLO	001	0008	1229	
#\$@KME	001	0003	1209	
#\$@KMO	001	0004	1153	
#\$@KNA	001	0008	1265	
#\$@KOV	001	0009	1185	
#\$@KPA	001	0005	1161	
#\$@KPO	001	000D	1249	
#\$@KPR	001	0009	1273	
#\$@KRE	001	0002	1193	
#\$@KRL	001	0004	1289	
#\$@KRM	001	0003	1157	
#\$@KRN	001	0003	1177	
#\$@KRO	001	000A	1181	
#\$@KRS	001	000A	1505	
#\$@KRU	001	0003	1201	
#\$@KRV	001	000D	1293	
#\$@KSA	001	0004	1237	
#\$@KSE	001	0004	1277	
#\$@KSO	001	000D	1329	
#\$@KSS	001	000B	1261	
#\$@KSV	001	0002	1257	
#\$@KSY	001	000F	1269	
#\$@KWI	001	0002	1197	
#\$@KWR	001	0002	1189	
#\$@LOA	001	0013	1129	
#\$@MIP	001	000D	1325	
#\$@SDS	001	0004	1437	
#\$@SFF	001	0008	1441	
#\$@SFL	001	0005	1433	
#\$@SFO	001	0003	1405	
#\$@SFS	001	0011	1401	
#\$@SPA	001	0004	1241	
#\$@SPO	001	0003	1245	
#\$@SPS	001	0001	1233	
#\$@STR	001	0002	1409	
#\$@TDC	001	0003	1213	
#\$@TSY	001	0003	1173	
#\$@TVK	001	0001	1349	
#\$@UAL	001	0011	1365	
#\$@UAT	001	000C	1461	
#\$@UCD	001	000B	1469	
#\$@UCN	001	0009	1453	
#\$@UCP	001	000F	1457	

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#\$@UDE	001	000E	1473
#\$@UDI	001	0008	1477
#\$@UEX	001	000E	1361
#\$@UIN	001	000F	1465
#\$@UPA	001	0004	1445
#\$@UPO	001	0005	1513
#\$@UPT	001	0012	1509
#\$@VCR	001	0008	1305
#\$@VLO	001	0002	1341
#\$@VOD	001	0016	1345
#\$@VVM	001	0030	1353
#\$@VXI	001	0002	1333
#\$@ZDU	001	0008	1485
#\$@ZLB	001	0002	1529
#\$@ZLO	001	000C	1489
#\$@ZLV	001	0006	1545
#\$@ZL1	001	0007	1533
#\$@ZL2	001	000D	1537
#\$@ZL3	001	000A	1541
#\$@ZTR	001	0001	1481
#\$@ZUT	001	0014	1493
#\$BCOM	001	0080	1123
#\$BOLV	001	1780	1395
#\$DPRI	001	014C	1131
#\$DREA	001	0200	1147
#\$DSPL	001	0240	1167
#\$ECMA	001	1900	1427
#\$EFKE	001	1990	1447
#\$ERRP	001	18C0	1419
#\$EXMS	001	07D4	1307
#\$FILN	001	1724	1387
#\$FIST	001	1700	1383
#\$FMLN	001	1E00	1515
#\$FMST	001	0D00	1355
#\$GRAP	001	0690	1279
#\$GUFU	001	1880	1415
#\$INLN	001	1C84	1495
#\$INST	001	0020	1119
#\$KALL	001	06A4	1283
#\$KCAL	001	1CC4	1499
#\$KCHA	001	053C	1251
#\$KCND	001	0F80	1367
#\$KCTL	001	03BC	1219
#\$KDEL	001	035C	1215
#\$KDIS	001	0744	1295
#\$KDNT	001	0300	1203
#\$KDOV	001	0780	1299
#\$KEDI	001	0188	1139
#\$KENA	001	01C4	1143
#\$KEXT	001	0234	1163
#\$KGOS	001	0180	1135
#\$KHEL	001	0A30	1319
#\$KKEY	001	2100	1547
#\$KLIS	001	0400	1223
#\$KLLA	001	2004	1523
#\$KLOG	001	0444	1227

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#\$KMER 001 030C 1207
#\$KMOU 001 0204 1151
#\$KNAM 001 05C0 1263
#\$KOVM 001 0290 1183
#\$KPAS 001 0220 1159
#\$KPOO 001 0508 1247
#\$KPRT 001 063C 1271
#\$KREA 001 02BC 1191
#\$KRLA 001 0700 1287
#\$KRMO 001 0214 1155
#\$KRNU 001 0280 1175
#\$KROV 001 028C 1179
#\$KRSU 001 1D24 1503
#\$KRUN 001 02CC 1199
#\$KRLV 001 0710 1291
#\$KSAY 001 0488 1235
#\$KSET 001 0680 1275
#\$KSOV 001 0AC8 1327
#\$KSSP 001 0594 1259
#\$KSVL 001 058C 1255
#\$KSYM 001 0600 1267
#\$KWID 001 02C4 1195
#\$KWR1 001 02B4 1187
#\$LOAD 001 0100 1127
#\$MIPP 001 0A80 1323
#\$SDSY 001 192C 1435
#\$SFFI 001 193C 1439
#\$SFLO 001 1918 1431
#\$SFOV 001 1844 1403
#\$SF SY 001 1800 1399
#\$SPAC 001 04CC 1239
#\$SPOV 001 04DC 1243
#\$SPSY 001 0484 1231
#\$STRO 001 1850 1407
#\$TDCK 001 0350 1211
#\$TSYK 001 0250 1171
#\$TVKB 001 0BAC 1347
#\$UALL 001 0F00 1363
#\$UATR 001 1A38 1459
#\$UCDI 001 1AD8 1467
#\$UCNF 001 19B8 1451
#\$UCPL 001 19DC 1455
#\$UDEL 001 1B24 1471
#\$UDIS 001 1B5C 1475
#\$UEXL 001 0EA8 1359
#\$UINI 001 1A88 1463
#\$UPAC 001 1980 1443
#\$UPOV 001 1D24 1511
#\$UPTF 001 1D5C 1507
#\$VCRT 001 07B4 1303
#\$VLOA 001 0B80 1339
#\$VODK 001 0B88 1343
#\$VVMR 001 0C00 1351
#\$VXIT 001 0B00 1331
#\$ZDUM 001 1BA4 1483
#\$ZLBM 001 2008 1527

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#\$ZLOA	001	1BC4	1487
#\$ZLVR	001	20B0	1543
#\$ZL1M	001	2010	1531
#\$ZL2M	001	2030	1535
#\$ZL3M	001	2088	1539
#\$ZTRA	001	1B9C	1479
#\$ZUTM	001	1C14	1491
##DNEA	001	0001	0957
##DNEF	001	0003	0958
##DNER	001	0005	0959
##DNE1	001	0004	0956
##DNHC	001	0000	0953
##DNHR	001	0003	0955
##DNHY	001	0001	0954
##DPEA	001	0009	0931
##DPEN	001	0007	0930
##DPER	001	000B	0932
##DPE1	001	0004	0929
##DPHC	001	0000	0927
##DPHR	001	0003	0928
##DUEA	001	0009	0942
##DUED	001	0012	0947
##DUEF	001	000B	0943
##DUEH	001	002B	0948
##DUEI	001	000C	0944
##DUEL	001	000F	0946
##DUEN	001	0007	0941
##DUER	001	0031	0949
##DUES	001	000D	0945
##DUE1	001	000C	0940
##DUHA	001	0001	0936
##DUHB	001	0003	0937
##DUHC	001	0004	0938
##DUHR	001	000B	0939
##LAAA	001	0002	0968
##LAHC	001	0001	0967
##LN	001	0001	0996
##LNE	001	0006	1002
##LNEF	001	0002	1000
##LNEZ	001	0002	1001
##LNH	001	0004	0999
##LNHY	001	0001	0997
##LNHZ	001	0002	0998
##LP	001	0004	0972
##LPPE	001	000C	0977
##LPEN	001	0008	0974
##LPEZ	001	0002	0975
##LPH	001	0004	0976
##LPHZ	001	0003	0973
##LU	001	0002	0981
##LUE	001	0032	0992
##LUED	001	0003	0989
##LUEF	001	0002	0985
##LUEH	001	0019	0990
##LUEI	001	0001	0986
##LUEL	001	0002	0988

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##LUEN	001	0008	0984	
##LUES	001	0001	0987	
##LUEZ	001	0006	0991	
##LUH	001	000C	0983	
##LUHZ	001	0007	0982	
##MNHM	001	002A	1025	
##MPHM	001	0055	1010	
##MUEG	001	0020	1017	
##MUEK	001	0040	1016	
##MUEP	001	0080	1015	
##MUER	001	0008	1019	
##MUEV	001	0002	1021	
##MUEX	001	0010	1018	
##MUEO	001	0004	1020	
##MUHM	001	000A	1014	
##RN	001	0000	0916	
##RP	001	0001	0917	
##R1	001	0007	0919	
##R2	001	0005	0918	
##@#BAD	001	0455	1052	
##@#IO1	001	0459	1060	2576
##@#IO2	001	045D	1061	
##@#TAT	001	0941	1088	
##@#TBA	001	09A1	1092	
##@#TFS	001	0941	1086	
##@#TSY	001	0941	1090	
##@#VFP	001	0700	1078	
##@#VLP	001	093D	1081	
##@#WDB	001	050C	1073	
##@#WFT	001	0500	1071	
##@@#BA	001	0001	1053	
##@@#IO	001	0001	1065	2577
##@@#SC	001	0002	1062	
##@@#TA	001	0010	1089	
##@@#TB	001	0010	1093	
##@@#TS	001	0005	1091	
##@@#TW	001	0020	1087	
##@@#VM	001	0100	1082	
##@@#WD	001	00BD	1074	
##@@#WF	001	0003	1072	
##@@#04	001	0004	1064	
##@@#08	001	0008	1063	
##@@BOV	001	0018	1041	
##@@ECM	001	0006	1055	
##@@ERR	001	0003	1049	
##@@GUF	001	0010	1045	
##@@LDS	001	0002	1051	
##@@SDS	001	0004	1047	
##@@SFF	001	0008	1059	
##@@SFL	001	0005	1057	
##@@SFO	001	0005	1067	
##@@SFS	001	0011	1043	
##@@VSF	001	0010	1095	
##@@VSL	001	000F	1096	
##@@VTR	001	0001	1080	
##@BOVL	001	0400	1040	

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#@ECMA	001	0481	1054	
#@ERRP	001	0441	1048	
#@GUFU	001	0401	1044	
#@LDSV	001	044D	1050	
#@SDSY	001	04AD	1046	
#@SFFI	001	04BD	1058	
#@SFLO	001	0449	1056	
#@SFOV	001	04C4	1066	
#@SF SY	001	0480	1042	
#@VSFI	001	09A1	1094	
#@VTRL	001	0708	1079	
#@WAF1	001	0401	1039	
#@WAR1	001	0400	1038	
#KRUN	001	0C07	2200	
#KRUNI	001	0000	0001	
@@E001	001	0000	2098	2100
@@E003	001	0001	2100	2102
@@E004	001	0002	2102	2104
@@E005	001	0003	2104	2106
@@E006	001	0004	2106	2108
@@E007	001	0005	2108	2110
@@E008	001	0006	2110	2112
@@E009	001	0007	2112	2114
@@E010	001	0008	2114	2116
@@E011	001	0009	2116	2118
@@E012	001	000A	2118	2120
@@E013	001	000B	2120	2122
@@E014	001	000C	2122	2124
@@E015	001	000D	2124	2126
@@E016	001	000E	2126	2128
@@E017	001	000F	2128	2130
@@E018	001	0010	2130	2132
@@E019	001	0011	2132	2134
@@E020	001	0012	2134	2136
@@E021	001	0013	2136	2138
@@E023	001	0014	2138	2140
@@E024	001	0015	2140	2142
@@E025	001	0016	2142	2144
@@E026	001	0017	2144	2146
@@E027	001	0018	2146	2148
@@E028	001	0019	2148	2150
@@E029	001	001A	2150	2152
@@E030	001	001B	2152	2154
@@E031	001	001C	2154	2156
@@E032	001	001D	2156	2158
@@E035	001	001E	2158	2160
@@E036	001	001F	2160	2162
@@E037	001	0020	2162	2164
@@E038	001	0021	2164	2166
@@E039	001	0022	2166	2168
@@E040	001	0023	2168	2170
@@E041	001	0024	2170	2172
@@E042	001	0025	2172	2174
@@E043	001	0026	2174	2176
@@E044	001	0027	2176	2178
@@E045	001	0028	2178	2180

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES

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@@E046 001 0029 2180 2182

@@E060 001 002A 2182 2184

@@E080 001 002B 2184

@@E100 001 0000 1570 1572

@@E101 001 0001 1572 1574

@@E102 001 0002 1574 1576

@@E103 001 0003 1576 1578

2720

@@E110 001 0004 1578 1580

@@E112 001 0005 1580 1582

@@E113 001 0006 1582 1584

@@E114 001 0007 1584 1586

@@E115 001 0008 1586 1588

@@E116 001 0009 1588 1590

@@E117 001 000A 1590 1592

@@E120 001 000B 1592 1594

@@E122 001 000C 1594 1596

@@E123 001 000D 1596 1598

@@E124 001 000E 1598 1600

@@E129 001 000F 1600 1602

@@E130 001 0010 1602 1604

@@E131 001 0011 1604 1606 2384

@@E133 001 0012 1606 1608

@@E134 001 0013 1608 1610 2410

@@E135 001 0014 1610 1612

@@E136 001 0015 1612 1614

@@E137 001 0016 1614 1616

@@E138 001 0017 1616 1618

@@E139 001 0018 1618 1620

@@E142 001 0019 1620 1622

@@E143 001 001A 1622 1624 2543

@@E150 001 001B 1624 1626 2391

@@E151 001 001C 1626 1628 2468

@@E160 001 001D 1628 1630

@@E162 001 001E 1630 1632

@@E163 001 001F 1632 1634

@@E164 001 0020 1634 1636

@@E200 001 0021 1636 1638

@@E205 001 0022 1638 1640

@@E210 001 0023 1640 1642

@@E211 001 0024 1642 1644

@@E212 001 0025 1644 1646

@@E213 001 0026 1646 1648

@@E215 001 0027 1648 1650

@@E216 001 0028 1650 1652

@@E217 001 0029 1652 1654

@@E220 001 002A 1654 1656 2339

@@E221 001 002B 1656 1658

@@E222 001 002C 1658 1660

@@E223 001 002D 1660 1662

@@E225 001 002E 1662 1664

@@E226 001 002F 1664 1666 2343

@@E227 001 0030 1666 1668 2348 2352

@@E228 001 0031 1668 1670

@@E229 001 0032 1670 1672

@@E230 001 0033 1672 1674

@@E232 001 0034 1674 1676

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SYMBOL LEN VALUE DEFN REFERENCES

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@@E234 001 0035 1676 1678
@@E237 001 0036 1678 1680
@@E240 001 0037 1680 1682
@@E241 001 0038 1682 1684
@@E242 001 0039 1684 1686
@@E248 001 003A 1686 1688
@@E249 001 003B 1688 1690
@@E250 001 003C 1690 1692
@@E251 001 003D 1692 1694
@@E252 001 003E 1694 1696
@@E253 001 003F 1696 1698
@@E254 001 0040 1698 1700
@@E255 001 0041 1700 1702
@@E256 001 0042 1702 1704
@@E300 001 0043 1704 1706
@@E301 001 0044 1706 1708
@@E302 001 0045 1708 1710
@@E303 001 0046 1710 1712
@@E304 001 0047 1712 1714
@@E305 001 0048 1714 1716
@@E308 001 0049 1716 1718
@@E310 001 004A 1718 1720
@@E315 001 004B 1720 1722
@@E316 001 004C 1722 1724
@@E320 001 004D 1724 1726
@@E325 001 004E 1726 1728
@@E330 001 004F 1728 1730
@@E335 001 0050 1730 1732
@@E338 001 0051 1732 1734
@@E340 001 0052 1734 1736
@@E350 001 0053 1736 1738
@@E351 001 0054 1738 1740
@@E352 001 0055 1740 1742
@@E360 001 0056 1742 1744
@@E361 001 0057 1744 1746
@@E362 001 0058 1746 1748
@@E371 001 0059 1748 1750
@@E380 001 005A 1750 1752
@@E390 001 005B 1752 1754
@@E400 001 005C 1754 1756
@@E410 001 005D 1756 1758
@@E415 001 005E 1758 1760
@@E417 001 005F 1760 1762
@@E420 001 0060 1762 1764
@@E430 001 0061 1764 1766
@@E432 001 0062 1766 1768
@@E433 001 0063 1768 1770
@@E450 001 0064 1770 1772
@@E451 001 0065 1772 1774
@@E460 001 0066 1774 1776
@@E461 001 0067 1776 1778
@@E464 001 0068 1778 1780
@@E465 001 0069 1780 1782
@@E466 001 006A 1782 1784
@@E467 001 006B 1784 1786
@@E469 001 006C 1786 1788

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SYMBOL LEN VALUE DEFN REFERENCES

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@@E470	001	006D	1788	1790
@@E471	001	006E	1790	1792
@@E473	001	006F	1792	1794
@@E474	001	0070	1794	1796
@@E475	001	0071	1796	1798
@@E476	001	0072	1798	1800
@@E477	001	0073	1800	1802
@@E478	001	0074	1802	1804
@@E479	001	0075	1804	1806
@@E480	001	0076	1806	1808
@@E481	001	0077	1808	1810
@@E482	001	0078	1810	1812
@@E483	001	0079	1812	1814
@@E484	001	007A	1814	1816
@@E485	001	007B	1816	1818
@@E486	001	007C	1818	1820
@@E487	001	007D	1820	1822
@@E488	001	007E	1822	1824
@@E489	001	007F	1824	1826
@@E490	001	0080	1826	1828
@@E491	001	0081	1828	1830
@@E492	001	0082	1830	1832
@@E493	001	0083	1832	1834
@@E494	001	0084	1834	1836
@@E495	001	0085	1836	1838
@@E496	001	0086	1838	1840
@@E497	001	0087	1840	1842
@@E498	001	0088	1842	1844
@@E500	001	0089	1844	1846
@@E501	001	008A	1846	1848
@@E530	001	008B	1848	1850
@@E531	001	008C	1850	1852
@@E535	001	008D	1852	1854
@@E540	001	008E	1854	1856
@@E541	001	008F	1856	1858
@@E542	001	0090	1858	1860
@@E543	001	0091	1860	1862
@@E544	001	0092	1862	1864
@@E545	001	0093	1864	1866
@@E546	001	0094	1866	1868
@@E547	001	0095	1868	1870
@@E548	001	FFFF	2074	
@@E549	001	0096	1870	1872
@@E550	001	0097	1872	1874
@@E551	001	0098	1874	1876
@@E552	001	0099	1876	1878
@@E553	001	009A	1878	1880
@@E554	001	009B	1880	1882
@@E555	001	009C	1882	1884
@@E556	001	009D	1884	1886
@@E558	001	009E	1886	1888
@@E570	001	009F	1888	1890
@@E571	001	00A0	1890	1892
@@E572	001	00A1	1892	1894
@@E573	001	00A2	1894	1896
@@E574	001	00A3	1896	1898

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SYMBOL LEN VALUE DEFN REFERENCES

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@@E575	001	FFFF	2076	
@@E578	001	00A4	1898	1900
@@E579	001	FFFF	2078	
@@E580	001	FFFF	2080	
@@E585	001	00A5	1900	1902
@@E595	001	FFFF	2082	
@@E597	001	FFFF	2084	
@@E598	001	FFFF	2086	
@@E600	001	00A6	1902	1904
@@E601	001	00A7	1904	1906
@@E602	001	00A8	1906	1908
@@E603	001	00A9	1908	1910
@@E604	001	00AA	1910	1912
@@E606	001	00AB	1912	1914
@@E607	001	00AC	1914	1916
@@E608	001	00AD	1916	1918
@@E609	001	00AE	1918	1920
@@E610	001	00AF	1920	1922 1930
@@E611	001	00B0	1922	1924
@@E612	001	00B1	1924	1926
@@E613	001	00B2	1926	1928
@@E614	001	00B3	1928	
@@E700	001	00B0	1930	1932
@@E701	001	00B1	1932	1934
@@E710	001	00B2	1934	1936
@@E712	001	00B3	1936	1938
@@E713	001	00B4	1938	1940
@@E714	001	00B5	1940	1942
@@E715	001	00B6	1942	1944
@@E716	001	00B7	1944	1946
@@E717	001	00B8	1946	1948
@@E718	001	00B9	1948	1950
@@E720	001	00BA	1950	1952
@@E721	001	00BB	1952	1954
@@E723	001	00BC	1954	1956
@@E724	001	00BD	1956	1958
@@E725	001	00BE	1958	1960
@@E726	001	00BF	1960	1962
@@E727	001	00C0	1962	1964
@@E728	001	00C1	1964	1966
@@E729	001	00C2	1966	1968
@@E730	001	00C3	1968	1970
@@E732	001	00C4	1970	1972
@@E752	001	00C5	1972	1974
@@E753	001	00C6	1974	1976
@@E754	001	00C7	1976	1978
@@E755	001	00C8	1978	1980
@@E756	001	00C9	1980	1982
@@E757	001	00CA	1982	1984
@@E758	001	00CB	1984	1986
@@E759	001	00CC	1986	1988
@@E760	001	00CD	1988	1990
@@E761	001	00CE	1990	1992
@@E762	001	00CF	1992	1994
@@E763	001	00D0	1994	1996
@@E764	001	00D1	1996	1998

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SYMBOL LEN VALUE DEFN REFERENCES

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@@E765 001 00D2 1998 2000

@@E766 001 00D3 2000 2002

@@E767 001 00D4 2002 2004

@@E768 001 00D5 2004 2006

@@E769 001 00D6 2006 2008

@@E770 001 00D7 2008 2010

@@E771 001 00D8 2010 2012

@@E772 001 00D9 2012 2014

@@E773 001 00DA 2014 2016

@@E774 001 00DB 2016 2018

@@E775 001 00DC 2018 2020

@@E776 001 00DD 2020 2022

@@E777 001 00DE 2022 2024

@@E778 001 00DF 2024 2026

@@E779 001 00E0 2026 2028

@@E780 001 00E1 2028 2030

@@E781 001 00E2 2030 2032

@@E782 001 00E3 2032 2034

@@E783 001 00E4 2034 2036

@@E784 001 00E5 2036 2038

@@E785 001 00E6 2038 2040

@@E786 001 00E7 2040 2042

@@E790 001 00E8 2042 2044

@@E791 001 00E9 2044 2046

@@E792 001 00EA 2046 2048

@@E793 001 00EB 2048 2050

@@E794 001 00EC 2050 2052

@@E795 001 00ED 2052 2054

@@E796 001 00EE 2054 2056

@@E797 001 00EF 2056 2058

@@E798 001 00F0 2058 2060

@@E800 001 FFFF 2088

@@E801 001 FFFF 2090

@@E802 001 FFFF 2092

@@E803 001 FFFF 2094

@@E804 001 FFFF 2096

@@E900 001 00F1 2060 2062

@@E901 001 00F2 2062 2064

@@E902 001 00F3 2064 2066

@@E903 001 00F4 2066 2068

@@E905 001 00F5 2068 2070

@@E906 001 00F6 2070 2072

@@E910 001 00F7 2072

@ALTFLL 001 0001 0249

@ARR 001 0008 0016 2501 2525 2718

@ASIGN 001 007C 0071

@ASTER 001 005C 0069

@BCRDL 001 0050 0088

@BE 001 0081 0043

@BF 001 0090 0052

@BH 001 0084 0041

@BKSPC 001 0010 0345

@BL 001 0082 0042

@BLANK 001 0040 0065 2536 2545 2723 2729

@BM 001 0082 0054

@BNE 001 0001 0046 2714

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SYMBOL LEN VALUE DEFN REFERENCES

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@DCALK	001	0001	0081	
@DCBCY	001	0009	0114	
@DCBT1	001	0050	0116	
@DCFLN	001	0004	0227	
@DCNT	001	0003	0127	
@DCRID	001	0001	0241	
@DCST1	001	0040	0115	
@DCTRL	001	0000	0124	
@DCTRW	001	0000	0240	
@DCWID	001	0001	0237	
@DCYL	001	0001	0125	
@DCYMV	001	0001	0228	
@DD2	001	0003	0030	
@DEFLG	001	0002	0250	
@DERCE	001	0020	0280	
@DERD2	001	0008	0273	
@DEREQ	001	0010	0272	
@DERIN	001	0040	0270	
@DERMA	001	0020	0271	
@DERNR	001	0004	0274	
@DERR	001	0000	0244	
@DERSC	001	0001	0276	
@DERTC	001	0002	0275	
@DFCR	001	0006	0230	
@DFDR	001	0004	0231	
@DGET	001	0001	0133	2559 2566 2575
@DHARD	001	0000	0258	
@DLNCT	001	000F	0343	
@DLNLG	001	0040	0342	
@DOLAR	001	005B	0068	
@DOP2	001	0004	0028	
@DPLNG	001	0006	0131	
@DPOS	001	0000	0132	
@DPUT	001	0002	0134	2551
@DREAD	001	0001	0234	
@DSAD	001	0002	0126	
@DSBCY	001	0004	0105	
@DSBSY	001	0092	0338	
@DSCS1	001	0000	0106	
@DSEEK	001	0000	0233	
@DSIVF	001	0003	0137	
@DSPIN	001	0002	0130	
@DTRSZ	001	0018	0085	
@DUNSF	001	0080	0269	
@DVBCY	001	0007	0107	2552
@DVERY	001	0003	0239	
@DVRFY	001	0031	0135	
@DVST1	001	0002	0245	
@DVST2	001	0003	0246	
@DWAIT	001	00FF	0136	
@DWBCY	001	0005	0102	
@DWRIT	001	0002	0235	
@DWSIZ	001	00C0	0104	
@DWTB1	001	0003	0103	
@DZERO	001	00F0	0064	
@D1	001	0002	0026	

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@OVRUN 001 0004 0281

@PBUSY 001 00E2 0293

@PCAR 001 00E6 0290

@PCNT 001 0003 0225

@PCTRL 001 0000 0147

@PCYL 001 0001 0223

@PC37B 001 00F2 0379

@PDAR 001 00E4 0289

@PDATA 001 0003 0149

@PD37B 001 0080 0393

@PERR 001 00E0 0296

@PFLAG 001 0000 0222

@PFORM 001 00E1 0294

0083

@PGCSZ 001 0020 0082

@PLITE 001 00E2 0295

@PLNGH 001 0004 0286

@PMGCK 001 0020 0297

@PN37B 001 00F0 0378

@PPLNG 001 0004 0146

@PRCNT 001 0001 0148

@PRETR 001 00C0 0152

@PRINT 001 0040 0150 0152

@PRITY 001 0080 0330

@PSAD 001 0002 0224

@PSIOQ 001 00E0 0292

@PSIOR 001 0000 0291

@PSNSQ 001 00E2 0298

@PSR 001 0004 0015

@PWAIT 001 00FF 0156

@P1IAR 001 0020 0018

@P2IAR 001 0040 0019

2737

@Q 001 0001 0024

@RD37B 001 00F1 0373

@REGL 001 0002 0012

@RETRN 001 0080 0151 0152

@RLDWN 001 004F 0157

@RTCNT 001 0003 0288

@RTRNC 001 0080 0159

@RT37B 001 0005 0386

@SBLNL 001 0002 0182

@SCTSZ 001 0100 0099

@SDFLN 001 0007 0090

@SDF0 001 0000 0164

@SDF1 001 0001 0165

@SDF2 001 0002 0166

@SDF3 001 0003 0167

@SDLN 001 0005 0168

@SECCY 001 0030 0086

@SIST 001 0001 0179

@SKCTL 001 0000 0238

@SLASH 001 0061 0067

@SLAST 001 0002 0181

@SMIDL 001 0003 0180

@SNSB0 001 0000 0262

@SNSB1 001 0001 0263

@SNSB2 001 0002 0264

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KRU310	003	0D78	2452	2449
KRU315	003	0D8A	2458	2453 2455
KRU320	003	0D91	2460	2457
KRU322	004	0DA8	2468	2483 2485 2488
KRU323	003	0DB0	2470	2467
KRU325	003	0DB3	2471	2481
KRU330	004	0DB6	2472	2461
KRU335	004	0DBA	2473	2451
KRU337	003	0DBE	2474	2464
KRU340	003	0DC1	2475	2491
KRU345	004	0DC4	2476	2479
KRU350	003	0DD2	2480	2477
KRU400	001	0DFE	2500	2387 2448 2463 2476 2487
KRU420	003	0E0E	2506	
KRU430	003	0E1A	2510	2503 2507
KRU440	004	0E1D	2511	2501* 2505 2509
KRU500	001	0E21	2524	2328 2380
KRU510	004	0E37	2532	2529
KRU520	003	0E3E	2535	
KRU530	003	0E41	2536	2534
KRU533	004	0E51	2541	2526*
KRU535	004	0E58	2543	
KRU536	004	0E5C	2544	
KRU540	003	0E60	2545	2540
KRU550	004	0E63	2546	2525* 2537
SCACNT	002	0EDC	2743	2733* 2734*
SCACOF	001	0087	2715	
SCACOM	001	0001	2714	2414
SCAINC	001	0001	2713	2722 2728
SCAMMA	003	0EB9	2737	2414*
SCANIT	001	0E9C	2717	2330 2386 2415 2538
SCASVE	002	0EDA	2742	2719* 2734
SCASV1	001	0ED9	2741	
SCA100	003	0EAB	2722	2724
SCA200	003	0EAE	2723	2721
SCA250	003	0EB8	2726	2737
SCA300	003	0EBB	2728	2730
SCA400	004	0ECB	2733	2726
SCA500	004	0ED5	2736	2718* 2732

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #KRUNI IS 3840 DECIMAL.
 OL103 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 4
 NAME-#KRUNI,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-R,CATEGORY-000

START ADDRESS	CATEGORY	NAME AND ENTRY	CODE LENGTH
			HEXADECIMAL DECIMAL

0C00	0	#KRUNI	0F00 3840
------	---	--------	-----------

OL100 I THE TOTAL CORE USED BY #KRUNI IS 3840 DECIMAL.
OL101 I THE START CONTROL ADDRESS OF THIS MODULE IS 0C00.
OL104 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 16
NAME-#KRUNI,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-O