

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 16/07/22 PAGE 2			
0000				1	#KRLAB	START 0				
				2		PRINT ON,NODATA				
				3	*	@SYS EXP-N				
				214+		PRINT ON				
				215	*	@FXD EXP-N				
				620+		PRINT ON				
				621	*	@CAN EXP-N				
				724+		PRINT ON				
				725	*	@ERM EXP-N				
				1347+		PRINT ON				
				1348	*	@SPF EXP-N				
				1811+		PRINT ON				
	0707		1812	KRLTBL	EQU	\$\$KLD2+@HDRLN				
	07F3		1813	KRLORG	EQU	KRLTBL+236				

## #KRLAB - SET KEYWORD COMMAND ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	16/07/22	PAGE	3
		1815		*****				
		1816	*	5703-XM1	COPYRIGHT IBM CORP. 1970			*
		1817	*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083			*
		1818	*					*
		1819		*****				
		1820	*	STATUS				*
		1821	*	VERSION 1 MODIFICATION 0				*
		1822	*					*
		1823	*	FUNCTION				*
		1824	*	THE KRLABL MODULE PERFORMS THE FUNCTION OF THE 'RELABEL' KEYWORD.				*
		1825	*	THIS COMMAND CAUSES THE VARIABLE NAMES OF THE WORKAREA PROGRAM				*
		1826	*	TO BE CHANGED ACCORDING TO THE USER'S SPECIFICATIONS.				*
		1827	*					*
		1828	*	ENTRY POINTS				*
		1829	*	THE ONLY ENTRY POINT TO KRLABL IS TO THE FIRST BYTE FOLLOWING THE				*
		1830	*	PROGRAM HEADER. THE LABEL IS #KRLAB.				*
		1831	*					*
		1832	*	INPUT				*
		1833	*	INPUT TO KRLABL IS THE COMMAND INPUT BUFFER AND THE BASIC PROGRAM				*
		1834	*	IN THE WORKAREA.				*
		1835	*					*
		1836	*	OUTPUT				*
		1837	*	OUTPUT FROM KRLABL IS THE LABEL TABLE TO BE USED IN #KRVLA.				*
		1838	*					*
		1839	*	EXTERNAL REFERENCES				*
		1840	*	* \$XRSV - REGISTER 2 (@XR) SAVE AREA				*
		1841	*	* \$CAERR - ERROR CODE SAVE AREA				*
		1842	*	* \$CAERK - EXIT TO LOAD #ERRPG, THE ERROR PROGRAM				*
		1843	*	* \$RLOAD - EXIT TO LOAD THE RELABEL PROGRAM OVERLAY, #KRVLA				*
		1844	*	* \$\$FITS - ADDRESS OF FIT IN CORE				*
		1845	*	* #KRVL - DISK ADDRESS OF RELABEL OVERLAY, #KRVLA				*
		1846	*	* SVALDC - SVARAB BIT INDICATOR FOR A LETTER-DIGIT LABEL				*
		1847	*	* SVALVC - SVARAB BIT INDICATOR FOR A LETTER-LABEL				*
		1848	*	* DL4ICS - ENTRY TO 4-TRACK DISK LOGICAL IOCS MODULE				*
		1849	*	* SCANIT - ENTRY TO DELIMITER SCAN MODULE				*
		1850	*	* SCAMMA - SCANIT INDICATOR SET TO ALLOW A COMMA				*
		1851	*					*
		1852	*	EXITS,NORMAL				*
		1853	*	NORMAL EXIT FROM KRLABL IS TO \$RLOAD TO LOAD THE RELABEL OVERLAY				*
		1854	*	PROGRAM, #KRVLA, TO CORE.				*
		1855	*					*
		1856	*	EXITS,ERROR				*
		1857	*	ERROR EXIT FROM KRLABL IS TO \$CAERK TO LOAD #ERRPG, THE ERROR				*
		1858	*	PROGRAM.				*
		1859	*					*
		1860	*	TABLES/WORKAREAS				*
		1861	*	PARAMETER TABLE IS CONSTRUCTED FOLLOWING THE SEVEN-BYTE PROGRAM				*
		1862	*	HEADER AT UKLD2. (MAXIMUM TABLE SIZE IS 236 BYTES.)				*
		1863	*					*
		1864	*	ATTRIBUTES				*
		1865	*	RELOCATABLE				*
		1866	*					*
		1867	*	CHARACTER CODE DEPENDENCY				*
		1868	*	NONE				*
		1869	*					*
		1870	*	NOTES				*

#KRLAB - SET KEYWORD COMMAND ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 16/07/22 PAGE 4
		1871	*	ERROR PROCEDURES	*
		1872	*	ON DETECTING ANY OF THE FOLLOWING SYNTAX ERRORS, THE ROUTINE	*
		1873	*	IS TERMINATED AND EXIT IS MADE TO \$CAERK:	*
		1874	*	* INVALID DELIMITER	*
		1875	*	* NO PARAMETERS SPECIFIED	*
		1876	*	* ODD NUMBER OF PARAMETERS	*
		1877	*	* MEMBERS OF A PARAMETER ARE NOT THE SAME TYPE	*
		1878	*	* LABEL IS IMPROPER FORM FOR A VARIABLE	*
		1879	*		*
		1880	*	REGISTER USAGE	*
		1881	*	* REGISTER 1 (@BR) IS USED AS A POINTER IN THE LABEL TABLE AND	*
		1882	*	LATER AS A BASE REGISTER FOR ADDRESSABILITY IN THE SECTION	*
		1883	*	WHERE THE WORKFILE IS BEING SAVED IN VIRTUAL MEMORY.	*
		1884	*	* REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE INPUT LINE	*
		1885	*	BUFFER.	*
		1886	*		*
		1887	*	SAVED/RESTORED AREAS	*
		1888	*	NONE	*
		1889	*		*
		1890	*	MODIFICATION CONSIDERATIONS	*
		1891	*	NONE	*
		1892	*		*
		1893	*	REQUIRED MODULES	*
		1894	*	* @SYSEQ - COMMON SYSTEM EQUATES	*
		1895	*	* @FXDEQ - NUCLEUS FIXED ADDRESS EQUATES	*
		1896	*	* @SPFEQ - SYSTEM PROGRAM FILE EQUATES FOR #KRVIA	*
		1897	*	* @ERMEQ - ERROR MESSAGE EQUATES (SELECTED ERROR CODES)	*
		1898	*	* @CANEQ - FIXED ADDRESSES OUTSIDE NUCLEUS EQUATES	*
		1899	*	* SCANIT - DELIMITER SCAN MODULE	*
		1900	*	* DL4ICS - 4-TRACK LOGICAL DISK IOCS MODULE	*
		1901	*		*
		1902	*	OTHER	*
		1903	*	NONE	*
		1904	*	*****	*

## #KRLAB - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 16/07/22 PAGE 5
0700				1906		ORG	\$\$KLD2	
				1907	*			
				1908	*	HDR	#KRLAB,1	GENERATE PROGRAM HEADER
				1909	*****			
				1910	*	PROGRAM HEADER FOR DISK LOAD		*
				1911	*****			
				1912	*#KRLA EQU	X'0700'		DISK ADDR OF #KRLAB
				1913	*#KRL EQU	X'0700'		CORE LOAD ADDRESS OF #KRLAB
				1914	*#@KRL EQU	004		SECTOR CNT OF #KRLAB
0700				1915	ORG	\$\$KRL		CORE LOAD ADDRESS
	0700			1916	\$\$\$\$\$ EQU	*		FIRST LOCATION IN PROGRAM
0700	7BD2D9D3C1C2			0705	1917	DC	CL6'#KRLAB'	PROGRAM NAME
0706	2B			0706	1918	DC	IL1'043'	PROGRAM NUMBER OF #KRLAB
				0707	1919	#RLAB EQU	*	ENTRY POINT TO PROGRAM
				1920	***	END OF EXPANSION	***	
				0707	1922	KRLAB EQU *		START OF RELABEL KEYWORD PROGRAM
				07F3	1923	USING KRL080,@XR		XR BASE REGISTER VALUE
				1924	*			
0707	C2 01 0707			1925		LA	KRLTBL,@BR	POINT BR TO START OF LABEL TBL
070B	35 02 03C7			1926		L	\$XRSAB,@XR	POINT XR TO BYTE AFTER KEYWORD
				1927	*			
070F	BD 60 00			1928		CLI	KRL000(,@XR),KRLDSH	XR POINTING TO 1-1 ?
0712	F2 81 12			1929		JE	KRL050	YES, SET 'INV DLMTER' ERR CODE
				1930	*			
0715	C0 87 0900			1931		B	SCANIT	BYPASS BLANKS
				1932	*			
0719	BD 1E 00			1933		CLI	KRL000(,@XR),@EOS	XR POINTING TO EOS?
071C	F2 81 0F			1934		JE	KRL060	YES, SET 'REQ PARAM MISSING' ERR
				1935	*			
071F	3C 01 091D			1936		MVI	SCAMMA,SCACOM	SET SCANIT INDR TO ALLOW A COMMA
				1937	*			
0723	C0 87 0941			1938		B	KRL100	EXIT TO CREATE LBL TBL
				1939	*			
0727	3C 18 03CD			1940	KRL050	MVI	\$CAERR,@E139	SET 'INV DELIMTER' ERR CODE
072B	F2 87 04			1941		J	KRL070	CALL ERROR PROG
				1942	*			
072E	3C 10 03CD			1943	KRL060	MVI	\$CAERR,@E130	SET 'REQ PARAM MISSING' ERR CODE
0732	C0 87 0469			1944	KRL070	B	\$CAERK	CALL ERROR PROG

## #KRLAB - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	16/07/22	PAGE	6
	07F3				1946		ORG KRLORG				
					1947	*					
					1948	*	SAVE WORKFILE IN VIRTUAL MEMORY				
					1949	*					
	07F3	E0 87 33			1950	KRL080 B	DL4ICS(,@XR)				CALL LOGICAL IOCS TO READ
	07F6	0813		07F7	1951	DC	AL(@CADDR)(KRLRPL)				* FILE FROM WORK AREA TO CORE
					1952	*					
	07F8	E0 87 33			1953	B	DL4ICS(,@XR)				CALL LOGICAL DISK IOCS TO WRITE
	07FB	0819		07FC	1954	DC	AL(@CADDR)(KRLWPL)				* FILE TO VIRTUAL MEMORY
					1955	*					
	07FD	AE 00 22 23			1956	ALC	KRLRPL+@DSAD(,@XR),KRLCSZ(1,@XR)				UPDATE READ DPL
	0801	AE 00 28 23			1957	ALC	KRLWPL+@DSAD(,@XR),KRLCSZ(1,@XR)				UPDATE WRITE DPL
					1958	*					
	0805	AF 00 32 23			1959	SLC	KRLFSZ(1,@XR),KRLCSZ(,@XR)				DECR FILE SIZE BY CORE SIZE
	0809	C0 02 07F3			1960	BNM	KRL080				LOOP IF MORE FILE TO TRANSFER
					1961	*					
	080D	C0 87 051E			1962	B	\$RLOAD				CALL OVERLAY ROUTINE
	0811	081F		0812	1963	DC	AL(@CADDR)(KRLOPL)				ADDR OF DPL
					1964	*					
					1965	*	DISK PARAMETER LISTS				
					1966	*					
	0813	01		0813	1967	KRLRPL DC	AL1(@DGET)				READ
				0814	1968	KRL084 EQU	*				PREPARE TO INITIALIZE DISK ADDR
	0814			0815	1969	DS	CL(@DADDR)				DISK ADDRESS --
	0814				1970	ORG	KRL084				* INITIALIZED TO FIRST DATA
	0814	0503		0815	1971	DC	XL(@DADDR)'0503'				* SECTOR OF WORK AREA
				0816	1972	KRL088 EQU	*				PREPARE TO INITIALIZE SCTR COUNT
	0816			0816	1973	KRLCSZ DS	CL1				SECTOR COUNT --
	0816				1974	ORG	KRL088				* INITIALIZED TO 8K SYSTEM,
	0816	17		0816	1975	DC	IL1'23'				* EXPANSION FACTOR IS ADDED
	0817	0900		0818	1976	DC	AL(@CADDR)(KRLTBF)				CORE ADDRESS OF DATA
					1977	*					
	0819	02		0819	1978	KRLWPL DC	AL1(@DPUT)				WRITE
				081A	1979	KRL092 EQU	*				PREPARE TO INITIALIZE DISK ADDR
	081A			081B	1980	DS	CL(@DADDR)				DISK ADDRESS --
	081A				1981	ORG	KRL092				* INITIALIZED TO FIRST DATA
	081A	0703		081B	1982	DC	XL(@DADDR)'0703'				* SECTOR OF VIRTUAL MEMORY
				081C	1983	KRL096 EQU	*				PREPARE TO INITIALIZE SCTR COUNT
	081C			081C	1984	DS	CL1				SECTOR COUNT --
	081C				1985	ORG	KRL096				* INITIALIZED TO 8K SYSTEM,
	081C	17		081C	1986	DC	IL1'23'				* EXPANSION FACTOR IS ADDED
	081D	0900		081E	1987	DC	AL(@CADDR)(KRLTBF)				CORE ADDRESS OF DATA
					1988	*					
	081F	01		081F	1989	KRLOPL DC	AL1(@DGET)				DPL TO READ
	0820	0710		0821	1990	DC	AL(@DADDR)(#\$KRVL)				* OVERLAY
	0822	0D		0822	1991	DC	AL1(\$@KRV)				* PROGRAM INTO CORE
	0823	0800		0824	1992	DC	AL(@CADDR)(\$ENDNU+X'0200')				
					1993	*					
	0825			0825	1994	KRLFSZ DS	XL1				FILE SIZE SAVE AREA
					1996	*	\$DL4P				

## DL4ICS - FOUR TRACK LOGICAL IOCR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	16/07/22	PAGE	7
1998+				*****				*
1999+				5703-XM1 COPYRIGHT IBM CORP. 1970				*
2000+				REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083				*
2001+								*
2002+				*****				*
2003+				*STATUS				*
2004+				VERSION 1 MODIFICATION 0				*
2005+								*
2006+				*FUNCTION				*
2007+				* DL4ICS WILL CONVERT A RELATIVE DISK ADDRESS TO A PHYSICAL				*
2008+				DISK ADDRESS AND CALL \$DISKN TO PERFORM THE SPECIFIED FUNCTION				*
2009+				* THE DISK ADDRESS IS A ONE BYTE CYLINDER ADDRESS AND A ONE BYTE				*
2010+				SECTOR DISPLACEMENT RELATIVE TO SECTOR 0 ON A CYLINDER				*
2011+				BOUNDARY				*
2012+				* WHEN MORE THAN 1 SECTOR IS PROCESSED, DL4ICS WILL MAKE MULTIPLE				*
2013+				CALLS TO \$DISKN TO CROSS CYLINDER BOUNDARIES IF REQUIRED.				*
2014+				* IF 1 SECTOR ONLY IS TO BE PROCESSED, THE USER MAY OVERLAY THE				*
2015+				UNUSED CODE BY ORGING HIS NEXT MODULE AT DL4SPT				*
2016+								*
2017+				*ENTRY POINTS				*
2018+				DL4ICS - ENTRY TO PROCESS A 4 SURFACE FILE. THE CALLING				*
2019+				SEQUENCE IS AS FOLLOWS				*
2020+				DSKL4 DPL				*
2021+				WHERE DPL IS THE LABEL OF A SIX BYTE DISK PARAMETER				*
2022+				LIST AS DESCRIBED FOR \$DISKN EXCEPT FOR THE SECTOR				*
2023+				ADDRESS BYTE.				*
2024+								*
2025+				*INPUT				*
2026+				* INPUT TO DL4ICS IS THE ADDRESS OF THE DPL TO BE PROCESSED.				*
2027+								*
2028+				*OUTPUT				*
2029+				* N/A				*
2030+								*
2031+				*EXTERNAL REFENECES				*
2032+				\$DISKN - ENTRY TO SYSTEM DISK ROUTINE				*
2033+								*
2034+				*EXITS, NORMAL				*
2035+				* NORMAL RETURN IS TO THE 1ST INSTRUCTION FOLLOWING THE TWO BYTE				*
2036+				ADDRESS POINTING TO THE DPL.				*
2037+								*
2038+				*EXITS, ERROR				*
2039+				* N/A				*
2040+								*
2041+				*TABLES/WORK AREAS				*
2042+				* N/A				*
2043+								*
2044+				*ATTRIBUTES				*
2045+				* RELOCATABLE				*
2046+				* REUSABLE				*
2047+								*
2048+				*CHARACTER CODE DEPENDENCY				*
2049+				* THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR				*
2050+				INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.				*
2051+								*
2052+				*NOTES				*
2053+				ERROR PROCEDURES				*



DL4ICS - FOUR TRACK LOGICAL IOCR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	16/07/22	PAGE	8
		2054+	*	N/A				*
		2055+	*					*
		2056+	*	REGISTER USAGE				*
		2057+	*	@BR IS SAVED AND RESTORED ON EXIT, @XR IS NOT USED. @ARR IS				*
		2058+	*	USED TO PROVIDE THE ADDRESS OF THE PARAMETER. THE @ARR IS				*
		2059+	*	INCREMENTED BT TWO AND SAVED AS THE RETURN ADDRESS.				*
		2060+	*					*
		2061+	*	SAVED/RESTORED AREAS				*
		2062+	*	N/A				*
		2063+	*					*
		2064+	*	MODIFICATION CONSIDERATIONS				*
		2065+	*	N/A				*
		2066+	*					*
		2067+	*	REQUIRED MODULES				*
		2068+	*	@SYSEQ - SYSTEM SOFTWARE EQUATES				*
		2069+	*	@FXDEQ - SYSTEM NUCLEUS EQUATES				*
		2070+	*					*
		2071+	*	OTHER				*
		2072+	*	NONE				*
		2073+	*	*****				*

## DL4ICS - FOUR TRACK LOGICAL IOCR

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 16/07/22 PAGE 9
				0826	2075+	DL4ICS	EQU *	ENTRY TO DL4ICS
0826	34	01	0896	082A	2076+		USING DL4010,@BR	ESTABLISH BASE REGISTER USAGE
					2077+		ST DL4900+@OP1,@BR	SAVE BASE REGISTER FOR EXIT
				082A	2078+	DL4010	EQU *	BASE ADDRESSABILITY
082A	C2	01	082A		2079+		LA DL4010,@BR	ESTABLISH BASE
082E	76	08	78		2080+		A DL4C01(,@BR),@ARR	BUMP TO HIGH END OF ADDR
0831	74	08	14		2081+		ST DL4020+@DOP2(,@BR),@ARR	SET UP MOVE INSTRUCTION
0834	76	08	78		2082+		A DL4C01(,@BR),@ARR	BUMP TO RETURN ADDR
0837	74	08	70		2083+		ST DL4920+@OP1(,@BR),@ARR	SAVE RETURN ADDR
					2084+*			
083A	4C	01	1D 0000		2085+	DL4020	MVC DL4030+@DOP2(@DADDR,@BR),*-*	MOVE DPL ADDR INTO MOVE
083F	5E	01	1D 7A		2086+		ALC DL4030+@DOP2(@CADDR,@BR),DL4C05(,@BR)	BUMP TO RIGHT END
0843	4C	05	76 0000		2087+	DL4030	MVC DL4DPL(@DPLNG,@BR),*-*	MOVE USER DPL TO WORK AREA
					2088+*			
0848	7C	00	5E		2089+	DL4035	MVI DL4100+@Q(,@BR),@ZERO	CLEAR TRACK, DISK SET INST
084B	7C	80	67		2090+		MVI DL4200+@Q(,@BR),@NOP	TURN OFF TWICE INDICATOR
					2091+*			
084E	7D	60	73		2092+	DL4040	CLI DL4SCD(,@BR),DL4E96	TEST IF DISPLACEMENT OVER 95 ?
0851	F2	82	0B		2093+		JL DL4050	JUMP IF NOT OVER 95
0854	5E	00	72 78		2094+		ALC DL4CYL(1,@BR),DL4C01(,@BR)	INCREMENT CYLINDER COUNT
0858	5F	00	73 25		2095+		SLC DL4SCD(1,@BR),DL4C96(,@BR)	DECREMENT DISP BY 96
085C	D0	87	24		2096+		B DL4040(,@BR)	GO BACK CHECK FOR NEXT CYLINDER
					2097+*			
085F	7D	30	73		2098+	DL4050	CLI DL4SCD(,@BR),DL4E48	TEST IF DISP ON NEXT DISK ?
0862	F2	82	07		2099+		JL DL4060	JUMP IF NOT OVER 48
0865	7A	01	5E		2100+		SBN DL4100+@Q(,@BR),DL4EFD	TURN ON BIT FOR FIXED DISK
0868	5F	00	73 36		2101+		SLC DL4SCD(1,@BR),DL4C48(,@BR)	DECREMENT DISP 1 DISK
086C	7D	01	74		2102+	DL4060	CLI DL4SCT(,@BR),DL4E01	IS SECTOR COUNT GREATER THEN 1 ?
086F	F2	84	33		2103+		JH DL4SPT	GO TO SPLIT CALL
0872	7D	18	73		2104+	DL4070	CLI DL4SCD(,@BR),DL4E24	DISPLACEMENT OVER 23 ?
0875	F2	82	07		2105+		JL DL4080	JUMP NOT OVER 24
0878	7A	80	5E		2106+		SBN DL4100+@Q(,@BR),DL4ETB	SET TRACK BIT ON
087B	5F	00	73 49		2107+		SLC DL4SCD(1,@BR),DL4C24(,@BR)	DECR DISP TO NEXT TRACK
087F	5E	00	73 73		2108+	DL4080	ALC DL4SCD(1,@BR),DL4SCD(,@BR)	SHIFT LEFT 1 PLACE
0883	5E	00	73 73		2109+		ALC DL4SCD(1,@BR),DL4SCD(,@BR)	SHIFT LEFT 1 PLACE
0887	7A	00	73		2110+	DL4100	SBN DL4SCD(,@BR),*-*	SET TRACK, DISK BIT
					2111+*			
088A	C0	87	0025		2112+		B \$DISKN	GO PERFORM DISK I/O
088E	089B			088F	2113+		DC AL2(DL4LST)	ADDR OF DISK PARAM LIST
					2114+*			
0890	F2	00	3C		2115+	DL4200	JC DL4600,*-*	BRANCH OR NOP IF TWICE SET
					2116+*			
0893	C2	01	0000		2117+	DL4900	LA *-*,@BR	RESTORE OLD BASE TO RETURN
0897	C0	87	0000		2118+	DL4920	B *-*	RETURN TO CALLER
					2119+*			
089B				089B	2120+	DL4LST	EQU *	LEFT END OF DPL
				08A0	2121+	DL4DPL	DS CL(@DPLNG)	DPL SAVE AREA
				089C	2122+	DL4CYL	EQU DL4LST+@DCYL	CYLINDER COUNT BYTE
				089D	2123+	DL4SCD	EQU DL4LST+@DSAD	DISPLACEMENT SECTOR COUNT
				0060	2124+	DL4E96	EQU 96	TWO DISK SECTOR COUNT PER CYL
				0030	2125+	DL4E48	EQU 48	ONE DISK SECTOR COUNT PER CYL
				0018	2126+	DL4E24	EQU 24	TRACK SECTOR COUNT
				0001	2127+	DL4E01	EQU 01	VALUE TO TEST SECTOR COUNT
				0001	2128+	DL4EFD	EQU 01	VALUE TO SET FIXED DISK BIT
				0080	2129+	DL4ETB	EQU X'80'	VALUE TO SET TRACK BIT
08A1	0001			08A2	2130+	DL4C01	DC IL2'1'	VALUE TO INCR TO CYLINDER

## DL4ICS - FOUR TRACK LOGICAL IOCR

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 16/07/22 PAGE 10

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08A3 0005      08A4 2131+DL4C05 DC    IL2'5'          DISP TO RIGHT END OF DPL
                084F 2132+DL4C96 EQU   DL4040+@Q        VALUE TO DECR DISPLACEMENT
                0873 2133+DL4C24 EQU   DL4070+@Q        VALUE OF 1 TRACK
                089E 2134+DL4SCT EQU   DL4LST+@DCNT      POINTER TO DPL SECTOR COUNT
                0860 2135+DL4C48 EQU   DL4050+@Q        VALUE TO DECR DISP BY 1 DISK

08A5 5C 00 14 74      2137+DL4500 MVC   DL4WRK(1,@BR),DL4SCT(,@BR) PICKUP SECTOR COUNT
                08A5 2138+DL4SPT EQU   DL4500          POSSIBLE OVERLAY REFERENCE
08A9 5E 00 14 73      2139+          ALC   DL4WRK(1,@BR),DL4SCD(,@BR) BUMP BY DISPLACEMENT
08AD 7D 30 14          2140+          CLI   DL4WRK(,@BR),DL4E48      TEST FOR CYLINDER OVERLAP
08B0 D0 04 48          2141+          BNH   DL4070(,@BR)          BRANCH BACK IF NO OVERLAY
08B3 5F 00 14 36      2142+          SLC   DL4WRK(1,@BR),DL4C48(,@BR) DECREMENT WORK BY 48
08B7 5F 00 74 14      2143+          SLC   DL4SCT(1,@BR),DL4WRK(,@BR) SUBTRACT WORK FROM COUNT
08BB 7C 87 67          2144+          MVI   DL4200+@Q(,@BR),@UCB    SET TWICE SWITCH
08BE 5C 00 13 73      2145+          MVC   DL4SAV(1,@BR),DL4SCD(,@BR) SAVE SECTOR DISP IN WORK AREA
08C2 78 01 5E          2146+          TBN   DL4100+@Q(,@BR),DL4EFD   DISK BIT ON IN Q CODE ?
08C5 D0 90 48          2147+          BF    DL4070(,@BR)          BRANCH NOT ON
08C8 5E 00 13 36      2148+          ALC   DL4SAV(1,@BR),DL4C48(,@BR) BUMP TO NEXT DISK
08CC D0 87 48          2149+          B     DL4070(,@BR)          RETURN TO CALL I/O
                2150+*
08CF 5C 00 73 13      2151+DL4600 MVC   DL4SCD(1,@BR),DL4SAV(,@BR) PICKUP NEXT HALF OF I/O
08D3 5E 00 75 74      2152+          ALC   DL4LST+@DBFR1(1,@BR),DL4SCT(,@BR) BUMP CORE ADDRESS
08D7 5E 00 73 74      2153+          ALC   DL4SCD(1,@BR),DL4SCT(,@BR)
08DB 5C 00 74 14      2154+          MVC   DL4SCT(1,@BR),DL4WRK(,@BR) MOVE IN NEW SECTOR COUNT
08DF D0 87 1E          2155+          B     DL4035(,@BR)          RETURN FOR SECOND PASS
                2156+*
083E 2157+DL4WRK EQU   DL4020+@DOP2      1 BYTE WORK AREA FOR SPLIT CALL
083D 2158+DL4SAV EQU   DL4020+@DOP2-1    1 BYTE WORK AREA FOR SPLIT CALL
08E2 2159+DL4END EQU   *                  DEFINE END OF CODE
                2160+***                  END OF DL4ICS                  ***
                2161 *                  PATCH 1
                2162 *****
                2163 *                  PATCH AREA 1                      *
                2164 *****
                2165 *                  CALCULATE AREA LEFT IN THIS SECTOR
                2166 *
0900      08E2 2167 $$$L1 EQU   *                  START PATCH AREA 1
                2168          ORG   *,256,0          SET LOC CNTR TO NEXT SECTOR
0900      2169 $$$T1 EQU   *                  DEFINE ADDR OF SCTR BNDRY
08E2      2170          ORG   $$$L1              SET LOC CNTR OF START
                2171 *                  * OF PATCH AREA
08E2      08FF 2172 $$$S1 DS    CL($$$T1-$$$L1)    PATCH AREA
                2173 *** END OF EXPANSION ***
                2174 *
0900      2175 KRLTBF EQU   *
                2176 *                  $CANI

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## SCANIT - DELIMETER SCAN MODULE

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		2178+		*****			
		2179+	*	5703-XM1	COPYRIGHT IBM CORP. 1970		*
		2180+	*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083		*
		2181+	*				*
		2182+	*	*****			*
		2183+	*	STATUS			*
		2184+	*	VERSION 1 MODIFICATION 0			*
		2185+	*				*
		2186+	*	FUNCTION			*
		2187+	*	THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND			*
		2188+	*	RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER.			*
		2189+	*				*
		2190+	*	ENTRY POINTS			*
		2191+	*	* THE ENTRY POINT IS SCANIT.			*
		2192+	*	* THE CALLING SEQUENCE IS AS FOLLOWS:			*
		2193+	*	B	SCANIT		*
		2194+	*	WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE			*
		2195+	*	EXAMINED.			*
		2196+	*				*
		2197+	*	INPUT			*
		2198+	*	NONE			*
		2199+	*				*
		2200+	*	OUTPUT			*
		2201+	*	NONE			*
		2202+	*				*
		2203+	*	EXTERNAL REFERENCES			*
		2204+	*	\$CAERR - ERROR CODE SAVE AREA			*
		2205+	*				*
		2206+	*	EXITS, NORMAL			*
		2207+	*	NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2208+	*	SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN			*
		2209+	*	A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR			*
		2210+	*	MORE DELIMITERS WERE SCANNED.			*
		2211+	*				*
		2212+	*	EXITS, ERROR			*
		2213+	*	ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2214+	*	SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW			*
		2215+	*	CONDITION.			*
		2216+	*				*
		2217+	*	TABLES/WORKAREAS			*
		2218+	*	* SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED			*
		2219+	*	* SCAMMA - LOC WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO			*
		2220+	*	TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA			*
		2221+	*	INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS.			*
		2222+	*				*
		2223+	*	ATTRIBUTES			*
		2224+	*	RELOCATABLE AND RE-USABLE			*
		2225+	*				*
		2226+	*	CHARACTER CODE DEPENDENCY			*
		2227+	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR			*
		2228+	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.			*
		2229+	*				*
		2230+	*	NOTES			*
		2231+	*	ERROR PROCEDURES			*
		2232+	*	THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE			*
		2233+	*	A CARRIAGE-RETURN CODE FOLLOWS A COMMA. UPON RETURN TO THE			*

## SCANIT - DELIMETER SCAN MODULE

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2234+*      CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE      *
2235+*      ERROR CODE IS SET IN $CAERR, AND MG WILU BE POINTING TO THE      *
2236+*      CARRIAGE-RETURN CHARACTER.                                       *
2237+*                                                                 *
2238+*      REGISTER USAGE                                                    *
2239+*      REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING      *
2240+*      SCANNED FOR DELIMITERS.                                           *
2241+*                                                                 *
2242+*      SAVED/RESTORED AREAS                                              *
2243+*      UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS      *
2244+*      THE RETURN ADDRESS.                                               *
2245+*                                                                 *
2246+*      MODIFICATION CONSIDERATIONS                                       *
2247+*      NONE                                                                *
2248+*                                                                 *
2249+*      REQUIRED MODULES                                                    *
2250+*      * @SYSEQ - COMMON SYSTEM EQUATES                                  *
2251+*      * @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES                        *
2252+*                                                                 *
2253+*      OTHER                                                                *
2254+*      SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS          *
2255+*      MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS.      *
2256+*      THE INSTRUCTION TO DO THIS IS AS FOLLOWS:                         *
2257+*      MVI    SCAMMA,SCACOM                                               *
2258+*                                                                 *
2259+*      TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE      *
2260+*      MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION:                  *
2261+*      MVI    SCAMMA,SCACOF                                               *
2262+*                                                                 *
2263+*****
2265+*
2266+*      EQUATES USED IN THIS SUBROUTINE
2267+*
0001 2268+SCAINC EQU    1          TO INCREMENT POINTER
0001 2269+SCACOM EQU   @BNE        SWITCH TO ALLOW SCANNING COMMA
0087 2270+SCACOF EQU   @UCB        SWITCH TO SET OFF THE INDICATON
2271+*      * FOR SCANNING A COMMA
0900 2272+SCANIT EQU   *          ENTRY POINT TO THIS SUBROUTINE
0900 34 08 093C      2273+      ST    SCA500+@OP1,@ARR          SAVE RETURN ADDRESS
0904 34 02 093E      2274+      ST    SCASVE,@XR              SAVE POINTER VALUE
0908 3C 04 03CD      2275+      MVI   $CAERR,@@E110           SET ERROR CODE
090C F2 87 03        2276+      J     SCA200                  GO TO PROCESS
090F E2 02 01        2277+SCA100 LA    SCAINC(,@XR),@XR        INCREMENT POINTER TO NEXT CHAR
0912 BD 40 00        2278+SCA200 CLI   0(,@XR),@BLANK         IS THIS CHAR BLANK ?
0915 C0 81 090F      2279+      BE    SCA100                  YES, FETCH NEXT ONE
0919 BD 6B 00        2280+      CLI   0(,@XR),@COMMA          IS IT A COMMA ?
091C F2 87 10        2281+SCA250 JC    SCA400,@UCB            UCS TO RETURN -- OR NOP IF
2282+*      * SCAMMA IS ACTIVE AND CHAR
091F E2 02 01        2283+SCA300 LA    SCAINC(,@XR),@XR        INCREMENT POINTER TO NEXT CHAR
0922 BD 40 00        2284+      CLI   0(,@XR),@BLANK         IS THIS CHAR A BLANK ?
0925 C0 81 091F      2285+      BE    SCA300                  YES, FETCH NEXT ONE
0929 BD 1F 00        2286+      CLI   0(,@XR),@EOS+1          IS THIS EOS ?
092C F2 82 0A        2287+      JL    SCA500                  IF NOT, SKIP ERROR ROUTINE
092F 34 02 0940      2288+SCA400 ST    SCACNT,@XR             SAVE NEW POINTER VALUE

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SCANIT - DELIMETER SCAN MODULE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		16/07/22	PAGE	13
0933	0F	01 0940	093E	2289+	SLC	SCACNT(2),SCASVE	SET PSR TO EQUAL IF POINTER				
				2290+*			* NOT ADVANCED				
0939	C0	87 0000		2291+	SCA500 B	*-*	YES, RETURN				
			091D	2292+	SCAMMA EQU	SCA250+@Q	TO SET SCAN COMMA INDICATOR				
				2293+*							
				2294+*		SAVE AREA					
				2295+*							
			093D	2296+	SCASV1 EQU	*	FIRST BYTE OF SCASVE				
093D			093E	2297+	SCASVE DS	CL2	ORIGINAL POINTER VALUE SAVE				
093F			0940	2298+	SCACNT DS	CL2	SAVE AREA FOR TOTAL CHAR SCAN				
				2299+***		END OF SCANIT	***				

## SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 16/07/22 PAGE 14
		2301	*			
		2302	*		BEGIN CHECK OF PARAMETER LIST	
		2303	*			
0941	34 02 0A41	2304	KRL100 ST	KRL230+@OP1,@XR	SAVE XR	
		2305	*			
0945	39 01 0A7A	2306	TBF	KRLIND,KRL2ND	IS THIS THE 1ST LBL OF A PAIR ?	
0949	F2 90 04	2307	JF	KRL105	NO, JUMP TO PROCESS LBL	
		2308	*			
094C	34 02 0A32	2309	ST	KRL210+@OP1,@XR	IF FIRST, SAVE XR IN CASE TYPES	
		2310	*		* DON'T MATCH	
0950	BD 5B 00	2311	KRL105 CLI	KRL000(,@XR),KRLDOL	XR POINTING TO '\$' ?	
0953	F2 81 18	2312	JE	KRL110	YES, JUMP TO TEST NEXT CHAR	
		2313	*			
0956	BD 7C 00	2314	CLI	KRL000(,@XR),KRLATS	ELSE, XR POINTING TO '@' ?	
0959	F2 81 12	2315	JE	KRL110	YES, JUMP TO TEST NEXT CHAR	
		2316	*			
095C	BD 7B 00	2317	CLI	KRL000(,@XR),KRLPND	ELSE, XR POINTING TO '#' ?	
095F	F2 81 0C	2318	JE	KRL110	YES, JUMP TO TEST NEXT CHAR	
		2319	*			
0962	BD C1 00	2320	CLI	KRL000(,@XR),KRLACD	XR POINTING TO CHAR >= 'A' ?	
0965	F2 82 C0	2321	JL	KRL200	NO, SET 'INV PARAM' ERR CODE	
		2322	*			
0968	BD E9 00	2323	CLI	KRL000(,@XR),KRLZCD	XR POINTING TO CHAR <= 'Z' ?	
096B	F2 84 BA	2324	JH	KRL200	NO, SET 'INV PARAM' ERR CODE	
		2325	*			
096E	6C 00 00 00	2326	KRL110 MVC	KRLD01(,@BR),KRL000(KRLONE,@XR)	MOVE ALPHA CHAR-- LBL TBL	
		2327	*			
0972	BD F0 01	2328	CLI	KRL001(,@XR),KRLHX0	XR+1 REF A CH IN EBCDIC < X'F0'?	
0975	F2 82 0A	2329	JL	KRL120	YES, JUMP TO CONTINUE TESTING	
		2330	*			
		2331	*		LABEL IS A LETTER-DIGIT VARIABLE	
		2332	*			
0978	6C 00 01 01	2333	MVC	KRLD02(,@BR),KRL001(KRLONE,@XR)	MOVE DIGIT TO LABEL TBL	
		2334	*			
097C	E2 02 02	2335	LA	KRLLLT(,@XR),@XR	INCR XR PAST LABEL	
097F	F2 87 37	2336	J	KRL130	TEST FOR DELIM AFTER LABEL	



## SCANIT - DELIMETER SCAN MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	16/07/22	PAGE	15
				2338	*						
				2339	*		TEST FOR CHARACTER VARIABLE OR ARRAY				
				2340	*						
0982	BD	5B	01	2341	KRL120	CLI	KRL001(,@XR),KRLDOL			XR+1 POINTING TO '\$' ?	
0985	F2	01	1A	2342		JNE	KRL125			NO, TEST FOR '(*)'	
				2343	*						
0988	8D	02	04	2344		CLC	KRL004(,@XR),KRLARY(KRL1AR)			ELSE, IS IT A CHAR ARRAY	
098D	F2	01	09	2345		JNE	KRL122			NO, JUMP TO PROCESS CHAR VAR	
				2346	*						
				2347	*		LABEL IS A CHARACTER ARRAY				
				2348	*						
0990	7C	02	01	2349		MVI	KRLD02(,@BR),SVACAC			SET TYPE CODE IN LABEL TABLE	
				2350	*						
0993	E2	02	05	2351		LA	KRL1CA(,@XR),@XR			INCR XR PAST LABEL	
0996	F2	87	20	2352		J	KRL130			LEST FOR DELIM AFTER LABEL	
				2353	*						
				2354	*		LABEL IS A CHARACTER VARIABLE				
				2355	*						
0999	7C	04	01	2356	KRL122	MVI	KRLD02(,@BR),SVACVC			SET TYPE CODE	
				2357	*						
099C	E2	02	02	2358		LA	KRL1CV(,@XR),@XR			INCR XR PAST LABEL	
099F	F2	87	17	2359		J	KRL130			TEST FOR DELIM AFTER LABEL	
				2360	*						
				2361	*		TEST FOR ARITHMETIC ARRAY				
				2362	*						
09A2	8D	02	03	2363	KRL125	CLC	KRL003(,@XR),KRLARY(KRL1AR)			IS LBL AN ARITH ARRAY ?	
09A7	F2	01	09	2364		JNE	KRL127			NO, PROCESS ARITH VAR	
				2365	*						
				2366	*		LABEL IS AN ARITHMETIC ARRAY				
				2367	*						
09AA	7C	08	01	2368		MVI	KRLD02(,@BR),SVANAC			SET TYPE CODE IN LABEL TABLE	
				2369	*						
09AD	E2	02	04	2370		LA	KRL1AA(,@XR),@XR			INCR XR PAST LABEL	
09B0	F2	87	06	2371		J	KRL130			TEST FOR DELIM AFTER LABEL	
				2372	*						
				2373	*		LABEL IS AN ARITHMETIC VARIABLE				
				2374	*						
09B3	7C	01	01	2375	KRL127	MVI	KRLD02(,@BR),SVALVC			SET TYPE CODE IN LABEL TABLE	
				2376	*						
09B6	E2	02	01	2377		LA	KRL1SL(,@XR),@XR			INCR XR PAST LABEL	



## SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 16/07/22 PAGE 16
			2379	*		
			2380	*	WAS LABEL FOLLOWED BY A VALID DELIMITER	
			2381	*		
09B9	C0 87 0900		2382	KRL130 B	SCANIT	BYPASS BLANKS AND/OR A COMMA
			2383	*		
09BD	F2 82 82		2384	JL	KRL240	IF DANGLING COMMA, CALL ERR PROG
09C0	F2 01 06		2385	JNZ	KRL135	IF BLANK OR COMMA, CONTINUE
			2386	*		
09C3	BD 1E 00		2387	CLI	KRL000(,@XR),@EOS	XR AT EOS ?
09C6	F2 01 5F		2388	JNE	KRL200	NO, INVALID PARAMETER
			2389	*		
			2390	*	TEST FOR UNBALANCED LABEL	
			2391	*		
09C9	39 01 0A7A		2392	KRL135 TBF	KRLIND,KRL2ND	WAS THIS THE 1ST LBL OF A PAIR ?
09CD	F2 90 12		2393	JF	KRL140	NO, JUMP TO TEST TYPES
			2394	*		
09D0	BD 1E 00		2395	CLI	KRL000(,@XR),@EOS	XR REF AN EOS ?
09D3	F2 81 64		2396	JE	KRL220	YES, SET ERR FOR UNBALANCED LBL
09D6	3A 01 0A7A		2397	SBN	KRLIND,KRL2ND	NO, SET INDR TO GET 2ND IN PAIR
09DA	1C 00 0A7E 01		2398	MVC	KRLTYP(KRLONE),KRL001(,@BR)	SAVE TYPE CODE OF LABEL
09DF	F2 87 3F		2399	J	KRL180	TEST NEXT LABEL
			2400	*		
			2401	*	TEST LABEL PAIR FOR MATCHING TYPES	
			2402	*		
09E2	38 10 0A7E		2403	KRL140 TBN	KRLTYP,SVALDC	WAS FIRST A LTR-DGT LBL ?
09E6	F2 90 0F		2404	JF	KRL150	NO, TEST SECOND FOR LTR-DGT LBL
			2405	*		
09E9	78 10 01		2406	TBN	KRLD02(,@BR),SVALDC	IS SECOND A LTR-DGT LBL ?
09EC	F2 10 28		2407	JT	KRL170	YES, PAIR OK -- GET NEXT LBL
			2408	*		
09EF	78 01 01		2409	TBN	KRLD02(,@BR),SVALVC	ELSE, IS SECOND A LETTER LBL ?
09F2	F2 90 3A		2410	JF	KRL210	NO, SET 'DIFF TYPES IN LBL PAIR'
			2411	*		
09F5	F2 87 1F		2412	J	KRL170	ELSE, PAIR OK -- GET NEXT LBL
			2413	*		
09F8	78 10 01		2414	KRL150 TBN	KRLD02(,@BR),SVALDC	IS SECOND IN PAIR A LTR-DGT ?
09FB	F2 90 11		2415	JF	KRL160	NO, JUMP TO TEST FOR TYPES SAME
			2416	*		
09FE	38 10 0A7E		2417	TBN	KRLTYP,SVALDC	WAS FIRST A LTR-DGT LBL
0A02	F2 10 12		2418	JT	KRL170	YES, PAIR OK -- GET NEXT LBL
			2419	*		
0A05	38 01 0A7E		2420	TBN	KRLTYP,SVALVC	ELSE; WAS FIRST A LETTER LBL ?
0A09	F2 90 23		2421	JF	KRL210	NO, SET 'DIFF TYPES IN LBL PAIR'
			2422	*		
0A0C	F2 87 08		2423	J	KRL170	ELSE, PAIR OK -- GET NEXT LBL
			2424	*		
0A0F	1D 00 0A7E 01		2425	KRL160 CLC	KRLTYP,KRLD02(KRLONE,@BR)	ARE TYPE CODES IN PAIR THE SAME
0A14	F2 01 18		2426	JNE	KRL210	NO, SET 'DIFF TYPES IN LBL PAIR'

## SCANIT - DELIMETER SCAN MODULE

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2428 *
2429 *          TYPES IN LABEL PAIR MATCH OR ARE COMPATIBLE
2430 *
0A17 3B 01 0A7A      2431 KRL170 SBF      KRLIND,KRL2ND          SET 'FIRST OF PAIR' IND ON
2432 *
0A1B BD 1E 00      2433          CLI      KRL000(,@XR),@EOS      IS XR REF AN EOS ?
0A1E F2 81 25      2434          JE      KRL250          YES, TABLE FINISHED
0A21 D2 01 02      2435 KRL180 LA      KRLTWO(,@BR),@BR      INCR TBL ADDR TO NEXT ENTRY
0A24 C0 87 0941     2436          B      KRL100          GET NEXT LABEL
2437 *
2438 *          SET ERROR CODES AND EXIT
2439 *
0A28 3C 1B 03CD     2440 KRL200 MVI      $CAERR,@E150      SET 'INV BASIC IDENTIFIER' ERR
0A2C F2 87 0F      2441          J      KRL230          CALL ERROR PROG
2442 *
0A2F C2 02 0000     2443 KRL210 LA      *-*,@XR          POINT XR TO FIRST LABEL IN PAIR
0A33 3C 1F 03CD     2444          MVI      $CAERR,@E163      SET ERR CODE FOR 'DIFF TYPES IN
0A37 F2 87 08      2445          J      KRL240          * LBL PAIR' AND CALL ERR PROG
2446 *
0A3A 3C 1E 03CD     2447 KRL220 MVI      $CAERR,@E162      SET ERR CODE 'UNBALANCED LBL PR'
0A3E C2 02 0000     2448 KRL230 LA      *-*,@XR          RESTORE XR TO FIRST OF LBL
0A42 C0 87 0469     2449 KRL240 B      $CAERK          CALL ERROR PROGRAM
2450 *
0A46 7C 4E 02      2451 KRL250 MVI      KRLTWO(,@BR),@CPLUS      SET IND FOR END OF TABLE
2452 *
2453 *          SEARCH FILE INDEX TABLE
2454 *
0A49 C2 02 07F3     2455          LA      KRL080,@XR          SET XR BASE REGISTER VALUE
2456 *
0A4D 8E 00 23 043B  2457          ALC      KRLCSZ(1,@XR),$EXFTR      ADD EXPANSION FACTOR TO CORE
0A52 AC 00 29 23    2458          MVC      KRLWPL+@DCNT(1,@XR),KRLCSZ(,@XR) * SIZE FOR READ & WRITE
2459 *
0A56 C2 01 1D0C     2460          LA      $$FITS+@FDE1+@FDSD,@BR      INITLZ FIT POINTER
0A5A 9C 00 32 00    2461          MVC      KRLFSZ(,@XR),@FDSD(@FLSD,@BR) INITLZ FILE SIZE
2462 *
0A5E D2 01 04      2463 KRL300 LA      @FLENT(,@BR),@BR          INCR PTR TO NEXT FIT ENTRY
2464 *
0A61 6D 00 00 32    2465          CLC      @FDSD(@FLSD,@BR),KRLFSZ(,@XR) BRANCH IF THIS ENTRY IS NOT
0A65 F2 04 04      2466          JNH      KRL310          * GREATER THAN PREVIOUS HI
2467 *
0A68 9C 00 32 00    2468          MVC      KRLFSZ(@FLSD,@XR),@FDSD(,@BR) SET NEW FILE SIZE
0A6C 0F 00 1D00 0464 2469 KRL310 SLC      $$FITS+@FDDBC(@FLDBC),$C0001 DECZ LOOP CONTROL
0A72 C0 01 0A5E     2470          BNZ      KRL300          BRANCH IF NOT FINISHED
0A76 C0 87 07F3     2471          B      KRL080          GO TO READ-WRITE OPERATION

```

## SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 16/07/22 PAGE 18
		2473	*			
		2474	*		EQUATES USED IN THIS ROUTINE	
		2475	*			
		0000	2476	KRL000 EQU	0	ZERO DISPLACEMENT
		0001	2477	KRL001 EQU	1	DISP OF ONE FOR CHAR IN I/P BFR
		0003	2478	KRL003 EQU	3	DISP OF 3 FOR TESTING '(*).'
		0004	2479	KRL004 EQU	4	DISP OF 4 FOR TESTING '\$(*).'
		0060	2480	KRLDSH EQU	C'-'	DASH CODE (INV DELIM)
		005B	2481	KRLDOL EQU	C'\$'	EBCDIC CODE FOR DOLLAR SIGN
		007C	2482	KRLATS EQU	C'@'	EBCDIC CODE FOR 'AT' SIGN
		007B	2483	KRLPND EQU	C'#'	EBCDIC CODE FOR POUND SIGN
		00C1	2484	KRLACD EQU	C'A'	EBCDIC CODE FOR 'A'
		00E9	2485	KRLZCD EQU	C'Z'	EBCDIC CODE FOR 'Z'
		00F0	2486	KRLHX0 EQU	C'0'	EBCDIC CODE FOR '0'
		00F9	2487	KRLHX9 EQU	C'9'	EBCDIC CODE FOR '9'
		0001	2488	KRLONE EQU	1	LENGTH OF ONE EBCDIC CHAR
		0002	2489	KRLTWO EQU	2	LENGTH OF TWO EBCDIC CHARACTERS
		0001	2490	KRLLSL EQU	1	LENGTH OF LETTER LBL
		0002	2491	KRLLLT EQU	2	LENGTH OF LTR-DGT LBL
		0002	2492	KRLLCV EQU	2	LENGTH OF CHAR LBL
		0004	2493	KRLCAA EQU	4	LENGTH OF ARITH ARRAY LBL
		0005	2494	KRLICA EQU	5	LENGTH OF CHAR ARRAY LBL
		0003	2495	KRLAR EQU	3	LENGTH OF '(*).'
		0001	2496	KRL2ND EQU	X'01'	INDICATOR FOR SECOND LBL IN PAIR
		2497	*			* 1 - 2ND LBL , 0 - 1ST LBL
		0000	2498	KRLD01 EQU	0	DISP TO FIRST BYTE OF LBL ENTRY
		0001	2499	KRLD02 EQU	1	DISP TO SECOND BYTE OF LBL ENTRY
		2500	*			
		2501	*		EQUATES FOR VARIABLE REFERENCE TYPE CODES	
		2502	*			
		0001	2503	SVALVC EQU	X'01'	CODE FOR A LETTER VAR REF
		0010	2504	SVALDC EQU	X'10'	CODE FOR A LETTER DIGIT VAR REF
		0004	2505	SVACVC EQU	X'04'	CODE FOR A CHAR VAR REF
		0008	2506	SVANAC EQU	X'08'	CODE FOR AN ARITH ARRAY REF
		0002	2507	SVACAC EQU	X'02'	COOL FOR A CHAR ARRAY RET
		2508	*			
		2509	*		CONSTANTS AND SAVE AREAS USED IN*THIS ROUTINE	
		2510	*			
		0A7A	2511	KRL400 EQU	*	PREPARE TO INITIALIZE INDICATOR
0A7A		0A7A	2512	KRLIND DS	XL1	INDICATOR FOR FIRST OR SECOND
0A7A			2513	ORG	KRL400	* LABEL IN A LABEL PAIR --
0A7A 00		0A7A	2514	DC	XL1'00'	* INITIALIZED TO THE FIRST ONE
		2515	*			
0A7B 4D5C5D		0A7D	2516	KRLARY DC	CL(KRLAR)'(*).'	CONSTANT '(*).'
0A7E		0A7E	2517	KRLTYP DS	XL1	SAVE AREA FOR TYPE OF 1ST LBL
		2518	*			* IN A PAIR

SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 16/07/22 PAGE 19
			2520	* PATCH 3	
			2521	*****	
			2522	* PATCH AREA 3 *	
			2523	*****	
			2524	* CALCULATE AREA LEFT IN THIS SECTOR	
			2525	*	
0B00		0A7F	2526	\$\$\$\$L3 EQU * START PATCH AREA 3	
			2527	ORG *,256,0 SET LOC CNTR TO NEXT SECTOR	
		0B00	2528	\$\$\$\$T3 EQU * DEFINE ADDR OF SCTR BNDRY	
0A7F			2529	ORG \$\$\$\$L3 SET LOC CNTR OF START	
			2530	* * OF PATCH AREA	
0A7F		0AFF	2531	\$\$\$\$\$3 DS CL(\$\$\$\$T3-\$\$\$\$L3) PATCH AREA	
			2532	*** END OF EXPANSION ***	
			2533	*	
		FFFF	2534	END	

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

## CROSS REFERENCE

VER 15, MOD 00 16/07/22 PAGE 20

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$	001	0700	1916	
\$\$\$\$\$1	030	08FF	2172	
\$\$\$\$\$3	129	0AFF	2531	
\$\$\$\$L1	001	08E2	2167	2170 2172
\$\$\$\$L3	001	0A7F	2526	2529 2531
\$\$\$\$T1	001	0900	2169	2172
\$\$\$\$T3	001	0B00	2528	2531
\$\$\$CMD	001	0020	0659	
\$\$\$DAT	001	0040	0658	
\$\$\$EPL	001	0091	0655	
\$\$\$ERN	001	0080	0709	
\$\$\$FUN	001	0010	0660	
\$\$\$NLN	001	00A0	0705	
\$\$\$STD	001	0081	0654	
\$\$BNLN	001	0605	0635	0637
\$\$CDBS	001	08C0	0685	
\$\$CDND	001	0666	0644	
\$\$CDRD	001	0890	0683	0685
\$\$CKEY	001	0603	0633	
\$\$CKFF	001	0B3D	0665	
\$\$COFF	001	0B44	0664	
\$\$CSNS	001	209C	0694	
\$\$DATB	001	0BBF	0666	
\$\$EOSA	001	0AFE	0663	
\$\$ERSK	001	1C00	0704	
\$\$FITS	001	1D00	0712	2460 2469*
\$\$FLIB	001	06FF	0711	
\$\$ILEN	001	0601	0629	0631 0635
\$\$ILHD	001	0600	0627	0629
\$\$INLN	001	0607	0642	0644 0646
\$\$INND	001	06FA	0646	
\$\$KBDT	001	09E1	0653	0657
\$\$KBSN	001	09E2	0657	0662
\$\$KLD1	001	0600	0717	
\$\$KLD2	001	0700	0719	1812 1906
\$\$KLD3	001	0C00	0721	
\$\$LPOS	001	09EB	0662	
\$\$PCNT	001	07E9	0678	
\$\$PLYN	001	2004	0692	
\$\$PRES	001	0890	0651	0653 0663 0664 0665 0666 0683
\$\$PRFL	001	2143	0696	
\$\$PRNT	001	0707	0672	0673 0677 0678
\$\$PRTN	001	0782	0673	
\$\$PSIO	001	07CE	0677	
\$\$PYCD	001	2200	0698	
\$\$PYMP	001	2000	0690	0692 0694 0696 0698
\$\$SLIB	001	1C00	0707	
\$\$TPCD	001	0606	0637	0642
\$\$UPAR	001	0602	0631	0633
\$\$WSPB	001	1E00	0710	
\$\$XIND	001	06FF	0708	0711
\$\$ZERO	001	0000	0223	0224 0226 0227 0228 0232 0690
\$ABORT	001	0010	0336	
\$BASIC	001	0080	0394	
\$BIGCD	001	0080	0470	
\$BLDPL	001	0579	0603	0605

CROSS REFERENCE											
SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00 16/07/22 PAGE 21						
\$BLNOE	001	0569	0593								
\$BLOAD	001	0522	0584	0586	0589	0602	0603				
\$BLRTN	001	0550	0592	0593							
\$BRSAV	001	03C5	0281	0282							
\$BSADR	001	0587	0608	0610							
\$BUFPT	001	03E3	0489	0490							
\$CABLD	001	04B4	0562	0563							
\$CAERK	001	0469	0539	0542	1944	2449					
\$CAERR	001	03CD	0287	0289	1940*	1943*	2275*	2440*	2444*	2447*	
\$CAIPL	001	049D	0558	0560							
\$CALLI	001	0008	0479								
\$CARDI	001	0001	0250								
\$CARPL	001	04A1	0560	0562							
\$CIENT	001	0483	0549	0550							
\$CIEXT	001	0480	0548	0549							
\$CIMSK	001	0476	0545	0548							
\$CISUS	001	0496	0553	0558							
\$CLBFR	001	0010	0437								
\$CMDKY	001	0008	0349								
\$CMODE	001	0002	0399								
\$CONFIG	001	03DD	0462	0472							
\$CRPOS	001	03E2	0488	0489							
\$CRTAD	001	044D	0527	0528							
\$CRTAV	001	0002	0343								
\$CRTDN	001	0002	0367								
\$CRTIN	001	03D3	0364	0371							
\$CRTNO	001	0004	0346								
\$CRTPU	001	0004	0368								
\$CRTSP	001	0008	0369								
\$CRTUP	001	0001	0366								
\$CRUSH	001	0080	0475								
\$CSDPL	001	050E	0574	0575							
\$C0001	001	0464	0531	0537	2469						
\$DATE	001	043A	0512	0513							
\$DBGUF	001	03E0	0474	0483							
\$DBLOK	001	0001	0424								
\$DFDET	001	03E8	0495	0496							
\$DISKN	001	0025	0226	2112							
\$DKERR	001	0008	0405								
\$DKSIZ	001	03D7	0449	0457	0498						
\$DK100	001	0001	0451								
\$DK200	001	0002	0452								
\$DK400	001	0004	0453								
\$DK600	001	0008	0454								
\$DK800	001	0010	0455								
\$DPLSV	001	0449	0523	0525							
\$DTNMB	001	0040	0270								
\$DTRDR	001	0040	0358								
\$ENDNU	001	0600	0617	0627	0651	0672	0708	0717	0719	0721	1992
\$ERDPL	001	046F	0542	0544							
\$ERFIL	001	0040	0297								
\$ERHRD	001	0004	0429								
\$ERKEY	001	0080	0301								
\$ERLOG	001	0345	0231								

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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 2457
\$FCIND	001	0010	0409	
\$FDIND	001	0040	0416	
\$FEARR	001	0004	0224	
\$FEMAP	001	0588	0610	0611
\$FILIB	001	03DA	0460	0461
\$FITIN	001	0010	0385	
\$FUIND	001	0020	0414	
\$GUFIO	001	0583	0607	0608
\$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
\$INDR3	001	03D6	0422	0449
\$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
\$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	
\$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	
\$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
\$NWRKF	001	0080	0445	
\$NWRKR	001	0040	0442	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$PASWD	001	042D	0509	0510
\$PAUSD	001	04BA	0563	0565
\$PAUSE	001	0002	0333	
\$PGMDT	001	0020	0388	
\$PGMST	001	0010	0352	
\$PKERT	001	0419	0507	0509
\$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 1962
\$RMGRN	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
\$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
\$VMDEF	001	0080	0325	
\$VOLF1	001	03FE	0504	0505
\$VOLF2	001	040E	0506	
\$VOLID	001	03F6	0502	0503 0507
\$VOLR1	001	03F6	0503	0504
\$VOLR2	001	0406	0505	0506
\$WAITF	001	057F	0605	0607
\$WFDEF	001	0040	0519	
\$WFLOK	001	0008	0382	
\$WFNME	001	0443	0518	0523
\$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 1926
\$ZTRAD	001	05A2	0611	
\$12K	001	0004	0466	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$16CKY	001	0008	0468	
\$16K	001	0002	0465	
\$22IMP	001	0001	0463	
###BL	001	0000	1672	
###CK	001	0000	1800	
###CN	001	0000	1768	
###CO	001	0000	1560	
###CS	001	0000	1620	
###DR	001	0000	1364	
###ER	001	0000	1564	
###FS	001	0000	1660	
###IN	001	0000	1804	
###PW	001	0000	1808	
###RS	001	0000	1640	
###SA	001	0000	1628	
###SS	001	0000	1624	
###VU	001	0600	1584	
###0T	001	0700	1356	
###1T	001	0000	1360	
###BCO	001	0600	1372	
###BOV	001	0800	1644	
###DPR	001	0700	1380	
###DRE	001	0889	1396	
###DSP	001	2800	1416	
###ECM	001	0C00	1676	
###EFK	001	0C00	1696	
###ERR	001	0C00	1668	
###EXM	001	0C00	1556	
###FIL	001	0E00	1636	
###FIS	001	0E00	1632	
###FML	001	0200	1764	
###FMS	001	0200	1604	
###GRA	001	0889	1528	
###GUF	001	0C00	1664	
###INL	001	0600	1744	
###INS	001	0600	1368	
###KAL	001	0C00	1532	
###KCA	001	0C00	1748	
###KCH	001	0C00	1500	
###KCN	001	0C00	1616	
###KCT	001	0C00	1468	
###KDE	001	0C00	1464	
###KDI	001	0D00	1544	
###KDN	001	0C00	1452	
###KDO	001	0E00	1548	
###KED	001	0C00	1388	
###KEN	001	0C00	1392	
###KEX	001	0C00	1412	
###KGO	001	0C00	1384	
###KHE	001	0C00	1568	
###KKE	001	0C00	1796	
###KLI	001	0C00	1472	
###KLL	001	0920	1772	
###KLO	001	0C00	1476	
###KME	001	0D00	1456	
###KMO	001	0C00	1400	

## CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 16/07/22 PAGE 25

###KNA 001 0C00 1512  
###KOV 001 0E00 1432  
###KPA 001 0C00 1408  
###KPO 001 0C00 1496  
###KPR 001 0C00 1520  
###KRE 001 0C00 1440  
###KRL 001 0700 1536 1915  
###KRM 001 0C00 1404  
###KRN 001 0700 1424  
###KRO 001 0D00 1428  
###KRS 001 0C00 1752  
###KRU 001 0C00 1448  
###KRV 001 0800 1540  
###KSA 001 0C00 1484  
###KSE 001 0E00 1524  
###KSO 001 0C20 1576  
###KSS 001 0C00 1508  
###KSV 001 0980 1504  
###KSY 001 0C00 1516  
###KWI 001 0C00 1444  
###KWR 001 0C00 1436  
###LOA 001 0600 1376  
###MIP 001 0C00 1572  
###SDS 001 0C00 1684  
###SFF 001 0E00 1688  
###SFL 001 0F00 1680  
###SFO 001 1500 1652  
###SFS 001 0C00 1648  
###SPA 001 0C00 1488  
###SPO 001 0806 1492  
###SPS 001 0C00 1480  
###STR 001 1600 1656  
###TDC 001 1000 1460  
###TSY 001 1000 1420  
###TVK 001 0FC0 1596  
###UAL 001 0C00 1612  
###UAT 001 0900 1708  
###UCD 001 0900 1716  
###UCN 001 0C00 1700  
###UCP 001 0700 1704  
###UDE 001 0C00 1720  
###UDI 001 0C00 1724  
###UEX 001 0C00 1608  
###UIN 001 0C00 1712  
###UPA 001 0C00 1692  
###UPO 001 0C00 1760  
###UPT 001 0C00 1756  
###VCR 001 2000 1552  
###VLO 001 0600 1588  
###VOD 001 0600 1592  
###VVM 001 0000 1600  
###VXI 001 0600 1580  
###ZDU 001 1100 1732  
###ZLB 001 1100 1776  
###ZLO 001 1100 1736  
###ZLV 001 0F00 1792

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$ZL1	001	0F00	1780	
\$\$\$ZL2	001	0F00	1784	
\$\$\$ZL3	001	0C00	1788	
\$\$\$ZTR	001	1000	1728	
\$\$\$ZUT	001	0C00	1740	
\$\$#BLN	001	18D4	1671	
\$\$#CKT	001	2118	1799	
\$\$#CNF	001	2000	1767	
\$\$#COR	001	0800	1559	
\$\$#CSA	001	1000	1619	
\$\$#DRT	001	0000	1363	
\$\$#ERM	001	0928	1563	
\$\$#FSP	001	1880	1659	
\$\$#INV	001	212C	1803	
\$\$#PWR	001	2300	1807	
\$\$#RSP	001	1780	1639	
\$\$#SAV	001	1180	1627	
\$\$#SSA	001	1128	1623	
\$\$#VUF	001	0B08	1583	
\$\$#0TR	001	0000	1355	
\$\$#1TR	001	0080	1359	
\$\$@#BL	001	0001	1673	
\$\$@#CK	001	0004	1801	
\$\$@#CN	001	0001	1769	
\$\$@#CO	001	003A	1561	
\$\$@#CS	001	003A	1621	
\$\$@#DR	001	0008	1365	
\$\$@#ER	001	0032	1565	
\$\$@#FS	001	0030	1661	
\$\$@#IN	001	003A	1805	
\$\$@#PW	001	00C0	1809	
\$\$@#RS	001	0030	1641	
\$\$@#SA	001	0108	1629	
\$\$@#SS	001	0001	1625	
\$\$@#VU	001	0002	1585	
\$\$@#0T	001	0018	1357	
\$\$@#1T	001	0018	1361	
\$\$@BCO	001	0018	1373	
\$\$@BOV	001	0018	1645	
\$\$@DPR	001	0005	1381	
\$\$@DRE	001	0001	1397	
\$\$@DSP	001	0004	1417	
\$\$@ECM	001	0006	1677	
\$\$@EFK	001	0002	1697	
\$\$@ERR	001	0003	1669	
\$\$@EXM	001	0003	1557	
\$\$@FIL	001	0009	1637	
\$\$@FIS	001	0009	1633	
\$\$@FML	001	0052	1765	
\$\$@FMS	001	0052	1605	
\$\$@GRA	001	0003	1529	
\$\$@GUF	001	0010	1665	
\$\$@INL	001	0010	1745	
\$\$@INS	001	0010	1369	
\$\$@KAL	001	000F	1533	
\$\$@KCA	001	000C	1749	

## CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 16/07/22 PAGE 27

##\$@KCH	001	000C	1501	
##\$@KCN	001	0010	1617	
##\$@KCT	001	0009	1469	
##\$@KDE	001	0010	1465	
##\$@KDI	001	0005	1545	
##\$@KDN	001	0010	1453	
##\$@KDO	001	000C	1549	
##\$@KED	001	000E	1389	
##\$@KEN	001	0006	1393	
##\$@KEX	001	0003	1413	
##\$@KGO	001	0002	1385	
##\$@KHE	001	000C	1569	
##\$@KKE	001	0006	1797	
##\$@KLI	001	0011	1473	
##\$@KLL	001	0001	1773	
##\$@KLO	001	0008	1477	
##\$@KME	001	0003	1457	
##\$@KMO	001	0004	1401	
##\$@KNA	001	0008	1513	
##\$@KOV	001	0009	1433	
##\$@KPA	001	0005	1409	
##\$@KPO	001	000D	1497	
##\$@KPR	001	0009	1521	
##\$@KRE	001	0002	1441	
##\$@KRL	001	0004	1537	
##\$@KRM	001	0003	1405	
##\$@KRN	001	0003	1425	
##\$@KRO	001	000A	1429	
##\$@KRS	001	000A	1753	
##\$@KRU	001	0003	1449	
##\$@KRV	001	000D	1541	1991
##\$@KSA	001	0011	1485	
##\$@KSE	001	0004	1525	
##\$@KSO	001	0005	1577	
##\$@KSS	001	000B	1509	
##\$@KSV	001	0002	1505	
##\$@KSY	001	000F	1517	
##\$@KWI	001	0002	1445	
##\$@KWR	001	0002	1437	
##\$@LOA	001	0013	1377	
##\$@MIP	001	000D	1573	
##\$@SDS	001	0004	1685	
##\$@SFF	001	0008	1689	
##\$@SFL	001	0005	1681	
##\$@SFO	001	0003	1653	
##\$@SFS	001	0011	1649	
##\$@SPA	001	0004	1489	
##\$@SPO	001	0003	1493	
##\$@SPS	001	0001	1481	
##\$@STR	001	0002	1657	
##\$@TDC	001	0003	1461	
##\$@TSY	001	0003	1421	
##\$@TVK	001	0001	1597	
##\$@UAL	001	0011	1613	
##\$@UAT	001	000C	1709	
##\$@UCD	001	000B	1717	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$@UCN	001	0009	1701	
#\$@UCP	001	000F	1705	
#\$@UDE	001	000E	1721	
#\$@UDI	001	0008	1725	
#\$@UEX	001	000E	1609	
#\$@UIN	001	000F	1713	
#\$@UPA	001	0004	1693	
#\$@UPO	001	0005	1761	
#\$@UPT	001	0012	1757	
#\$@VCR	001	0008	1553	
#\$@VLO	001	0002	1589	
#\$@VOD	001	0016	1593	
#\$@VVM	001	0030	1601	
#\$@VXI	001	0002	1581	
#\$@ZDU	001	0008	1733	
#\$@ZLB	001	0002	1777	
#\$@ZLO	001	000C	1737	
#\$@ZLV	001	0006	1793	
#\$@ZL1	001	0007	1781	
#\$@ZL2	001	000D	1785	
#\$@ZL3	001	000A	1789	
#\$@ZTR	001	0001	1729	
#\$@ZUT	001	0014	1741	
#\$BCOM	001	0080	1371	
#\$BOLV	001	1780	1643	
#\$DPRI	001	014C	1379	
#\$DREA	001	0200	1395	
#\$DSPL	001	0240	1415	
#\$ECMA	001	1900	1675	
#\$EFKE	001	1990	1695	
#\$ERRP	001	18C0	1667	
#\$EXMS	001	07D4	1555	
#\$FILN	001	1724	1635	
#\$FIST	001	1700	1631	
#\$FMLN	001	1E00	1763	
#\$FMST	001	0D00	1603	
#\$GRAP	001	0690	1527	
#\$GUFU	001	1880	1663	
#\$INLN	001	1C84	1743	
#\$INST	001	0020	1367	
#\$KALL	001	06A4	1531	
#\$KCAL	001	1CC4	1747	
#\$KCHA	001	053C	1499	
#\$KCND	001	0F80	1615	
#\$KCTL	001	03BC	1467	
#\$KDEL	001	035C	1463	
#\$KDIS	001	0744	1543	
#\$KDNT	001	0300	1451	
#\$KDOV	001	0780	1547	
#\$KEDI	001	0188	1387	
#\$KENA	001	01C4	1391	
#\$KEXT	001	0234	1411	
#\$KGOS	001	0180	1383	
#\$KHEL	001	0A30	1567	
#\$KKEY	001	2100	1795	
#\$KLIS	001	0400	1471	

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#\$KLLA	001	2004	1771	
#\$KLOG	001	0444	1475	
#\$KMER	001	030C	1455	
#\$KMOU	001	0204	1399	
#\$KNAM	001	05C0	1511	
#\$KOVN	001	0290	1431	
#\$KPAS	001	0220	1407	
#\$KPOO	001	0508	1495	
#\$KPRT	001	063C	1519	
#\$KREA	001	02BC	1439	
#\$KRLA	001	0700	1535	
#\$KRMO	001	0214	1403	
#\$KRNU	001	0280	1423	
#\$KROV	001	028C	1427	
#\$KRSU	001	1D24	1751	
#\$KRUN	001	02CC	1447	
#\$KRVL	001	0710	1539	1990
#\$KSAV	001	0488	1483	
#\$KSET	001	0680	1523	
#\$KSOV	001	0AC8	1575	
#\$KSSP	001	0594	1507	
#\$KSVL	001	058C	1503	
#\$KSYM	001	0600	1515	
#\$KWID	001	02C4	1443	
#\$KWRI	001	02B4	1435	
#\$LOAD	001	0100	1375	
#\$MIPP	001	0A80	1571	
#\$SDSY	001	192C	1683	
#\$SFFI	001	193C	1687	
#\$SFLO	001	1918	1679	
#\$SFOV	001	1844	1651	
#\$SFSY	001	1800	1647	
#\$SPAC	001	04CC	1487	
#\$SPOV	001	04DC	1491	
#\$SPSY	001	0484	1479	
#\$STRO	001	1850	1655	
#\$TDCK	001	0350	1459	
#\$TSYK	001	0250	1419	
#\$TVKB	001	0BAC	1595	
#\$UALL	001	0F00	1611	
#\$UATR	001	1A38	1707	
#\$UCDI	001	1AD8	1715	
#\$UCNF	001	19B8	1699	
#\$UCPL	001	19DC	1703	
#\$UDEL	001	1B24	1719	
#\$UDIS	001	1B5C	1723	
#\$UEXL	001	0EA8	1607	
#\$UINI	001	1A88	1711	
#\$UPAC	001	1980	1691	
#\$UPOV	001	1D24	1759	
#\$UPTF	001	1D5C	1755	
#\$VCRT	001	07B4	1551	
#\$VLOA	001	0B80	1587	
#\$VODK	001	0B88	1591	
#\$VVMR	001	0C00	1599	
#\$VXIT	001	0B00	1579	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$ZDUM	001	1BA4	1731	
#\$ZLBM	001	2008	1775	
#\$ZLOA	001	1BC4	1735	
#\$ZLVR	001	20B0	1791	
#\$ZL1M	001	2010	1779	
#\$ZL2M	001	2030	1783	
#\$ZL3M	001	2088	1787	
#\$ZTRA	001	1B9C	1727	
#\$ZUTM	001	1C14	1739	
#KRLAB	001	0000	0001	
#RLAB	001	0707	1919	
@@E001	001	0000	1259	1261
@@E003	001	0001	1261	1263
@@E004	001	0002	1263	1265
@@E005	001	0003	1265	1267
@@E006	001	0004	1267	1269
@@E007	001	0005	1269	1271
@@E008	001	0006	1271	1273
@@E009	001	0007	1273	1275
@@E010	001	0008	1275	1277
@@E011	001	0009	1277	1279
@@E012	001	000A	1279	1281
@@E013	001	000B	1281	1283
@@E014	001	000C	1283	1285
@@E015	001	000D	1285	1287
@@E016	001	000E	1287	1289
@@E017	001	000F	1289	1291
@@E018	001	0010	1291	1293
@@E019	001	0011	1293	1295
@@E020	001	0012	1295	1297
@@E021	001	0013	1297	1299
@@E023	001	0014	1299	1301
@@E024	001	0015	1301	1303
@@E025	001	0016	1303	1305
@@E026	001	0017	1305	1307
@@E027	001	0018	1307	1309
@@E028	001	0019	1309	1311
@@E029	001	001A	1311	1313
@@E030	001	001B	1313	1315
@@E031	001	001C	1315	1317
@@E032	001	001D	1317	1319
@@E035	001	001E	1319	1321
@@E036	001	001F	1321	1323
@@E037	001	0020	1323	1325
@@E038	001	0021	1325	1327
@@E039	001	0022	1327	1329
@@E040	001	0023	1329	1331
@@E041	001	0024	1331	1333
@@E042	001	0025	1333	1335
@@E043	001	0026	1335	1337
@@E044	001	0027	1337	1339
@@E045	001	0028	1339	1341
@@E046	001	0029	1341	1343
@@E060	001	002A	1343	1345
@@E080	001	002B	1345	
@@E100	001	0000	0731	0733

## CROSS REFERENCE

SYMBOL   LEN   VALUE   DEFN   REFERENCES   VER 15, MOD 00   16/07/22   PAGE   31

@@E101	001	0001	0733	0735	
@@E102	001	0002	0735	0737	
@@E103	001	0003	0737	0739	
@@E110	001	0004	0739	0741	2275
@@E112	001	0005	0741	0743	
@@E113	001	0006	0743	0745	
@@E114	001	0007	0745	0747	
@@E115	001	0008	0747	0749	
@@E116	001	0009	0749	0751	
@@E117	001	000A	0751	0753	
@@E120	001	000B	0753	0755	
@@E122	001	000C	0755	0757	
@@E123	001	000D	0757	0759	
@@E124	001	000E	0759	0761	
@@E129	001	000F	0761	0763	
@@E130	001	0010	0763	0765	1943
@@E131	001	0011	0765	0767	
@@E133	001	0012	0767	0769	
@@E134	001	0013	0769	0771	
@@E135	001	0014	0771	0773	
@@E136	001	0015	0773	0775	
@@E137	001	0016	0775	0777	
@@E138	001	0017	0777	0779	
@@E139	001	0018	0779	0781	1940
@@E142	001	0019	0781	0783	
@@E143	001	001A	0783	0785	
@@E150	001	001B	0785	0787	2440
@@E151	001	001C	0787	0789	
@@E160	001	001D	0789	0791	
@@E162	001	001E	0791	0793	2447
@@E163	001	001F	0793	0795	2444
@@E164	001	0020	0795	0797	
@@E200	001	0021	0797	0799	
@@E205	001	0022	0799	0801	
@@E210	001	0023	0801	0803	
@@E211	001	0024	0803	0805	
@@E212	001	0025	0805	0807	
@@E213	001	0026	0807	0809	
@@E215	001	0027	0809	0811	
@@E216	001	0028	0811	0813	
@@E217	001	0029	0813	0815	
@@E220	001	002A	0815	0817	
@@E221	001	002B	0817	0819	
@@E222	001	002C	0819	0821	
@@E223	001	002D	0821	0823	
@@E225	001	002E	0823	0825	
@@E226	001	002F	0825	0827	
@@E227	001	0030	0827	0829	
@@E228	001	0031	0829	0831	
@@E229	001	0032	0831	0833	
@@E230	001	0033	0833	0835	
@@E232	001	0034	0835	0837	
@@E234	001	0035	0837	0839	
@@E237	001	0036	0839	0841	
@@E240	001	0037	0841	0843	
@@E241	001	0038	0843	0845	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E242	001	0039	0845	0847
@@E248	001	003A	0847	0849
@@E249	001	003B	0849	0851
@@E250	001	003C	0851	0853
@@E251	001	003D	0853	0855
@@E252	001	003E	0855	0857
@@E253	001	003F	0857	0859
@@E254	001	0040	0859	0861
@@E255	001	0041	0861	0863
@@E256	001	0042	0863	0865
@@E300	001	0043	0865	0867
@@E301	001	0044	0867	0869
@@E302	001	0045	0869	0871
@@E303	001	0046	0871	0873
@@E304	001	0047	0873	0875
@@E305	001	0048	0875	0877
@@E308	001	0049	0877	0879
@@E310	001	004A	0879	0881
@@E315	001	004B	0881	0883
@@E316	001	004C	0883	0885
@@E320	001	004D	0885	0887
@@E325	001	004E	0887	0889
@@E330	001	004F	0889	0891
@@E335	001	0050	0891	0893
@@E338	001	0051	0893	0895
@@E340	001	0052	0895	0897
@@E350	001	0053	0897	0899
@@E351	001	0054	0899	0901
@@E352	001	0055	0901	0903
@@E360	001	0056	0903	0905
@@E361	001	0057	0905	0907
@@E362	001	0058	0907	0909
@@E371	001	0059	0909	0911
@@E380	001	005A	0911	0913
@@E390	001	005B	0913	0915
@@E400	001	005C	0915	0917
@@E410	001	005D	0917	0919
@@E415	001	005E	0919	0921
@@E417	001	005F	0921	0923
@@E420	001	0060	0923	0925
@@E430	001	0061	0925	0927
@@E432	001	0062	0927	0929
@@E433	001	0063	0929	0931
@@E450	001	0064	0931	0933
@@E451	001	0065	0933	0935
@@E460	001	0066	0935	0937
@@E461	001	0067	0937	0939
@@E464	001	0068	0939	0941
@@E465	001	0069	0941	0943
@@E466	001	006A	0943	0945
@@E467	001	006B	0945	0947
@@E469	001	006C	0947	0949
@@E470	001	006D	0949	0951
@@E471	001	006E	0951	0953
@@E473	001	006F	0953	0955
@@E474	001	0070	0955	0957

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E475	001	0071	0957	0959
@@E476	001	0072	0959	0961
@@E477	001	0073	0961	0963
@@E478	001	0074	0963	0965
@@E479	001	0075	0965	0967
@@E480	001	0076	0967	0969
@@E481	001	0077	0969	0971
@@E482	001	0078	0971	0973
@@E483	001	0079	0973	0975
@@E484	001	007A	0975	0977
@@E485	001	007B	0977	0979
@@E486	001	007C	0979	0981
@@E487	001	007D	0981	0983
@@E488	001	007E	0983	0985
@@E489	001	007F	0985	0987
@@E490	001	0080	0987	0989
@@E491	001	0081	0989	0991
@@E492	001	0082	0991	0993
@@E493	001	0083	0993	0995
@@E494	001	0084	0995	0997
@@E495	001	0085	0997	0999
@@E496	001	0086	0999	1001
@@E497	001	0087	1001	1003
@@E498	001	0088	1003	1005
@@E500	001	0089	1005	1007
@@E501	001	008A	1007	1009
@@E530	001	008B	1009	1011
@@E531	001	008C	1011	1013
@@E535	001	008D	1013	1015
@@E540	001	008E	1015	1017
@@E541	001	008F	1017	1019
@@E542	001	0090	1019	1021
@@E543	001	0091	1021	1023
@@E544	001	0092	1023	1025
@@E545	001	0093	1025	1027
@@E546	001	0094	1027	1029
@@E547	001	0095	1029	1031
@@E548	001	FFFF	1235	
@@E549	001	0096	1031	1033
@@E550	001	0097	1033	1035
@@E551	001	0098	1035	1037
@@E552	001	0099	1037	1039
@@E553	001	009A	1039	1041
@@E554	001	009B	1041	1043
@@E555	001	009C	1043	1045
@@E556	001	009D	1045	1047
@@E558	001	009E	1047	1049
@@E570	001	009F	1049	1051
@@E571	001	00A0	1051	1053
@@E572	001	00A1	1053	1055
@@E573	001	00A2	1055	1057
@@E574	001	00A3	1057	1059
@@E575	001	FFFF	1237	
@@E578	001	00A4	1059	1061
@@E579	001	FFFF	1239	
@@E580	001	FFFF	1241	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E585	001	00A5	1061	1063
@@E595	001	FFFF	1243	
@@E597	001	FFFF	1245	
@@E598	001	FFFF	1247	
@@E600	001	00A6	1063	1065
@@E601	001	00A7	1065	1067
@@E602	001	00A8	1067	1069
@@E603	001	00A9	1069	1071
@@E604	001	00AA	1071	1073
@@E606	001	00AB	1073	1075
@@E607	001	00AC	1075	1077
@@E608	001	00AD	1077	1079
@@E609	001	00AE	1079	1081
@@E610	001	00AF	1081	1083
@@E611	001	00B0	1083	1085
@@E612	001	00B1	1085	1087
@@E613	001	00B2	1087	1089
@@E614	001	00B3	1089	1091
@@E700	001	00B4	1091	1093
@@E701	001	00B5	1093	1095
@@E710	001	00B6	1095	1097
@@E712	001	00B7	1097	1099
@@E713	001	00B8	1099	1101
@@E714	001	00B9	1101	1103
@@E715	001	00BA	1103	1105
@@E716	001	00BB	1105	1107
@@E717	001	00BC	1107	1109
@@E718	001	00BD	1109	1111
@@E720	001	00BE	1111	1113
@@E721	001	00BF	1113	1115
@@E723	001	00C0	1115	1117
@@E724	001	00C1	1117	1119
@@E725	001	00C2	1119	1121
@@E726	001	00C3	1121	1123
@@E727	001	00C4	1123	1125
@@E728	001	00C5	1125	1127
@@E729	001	00C6	1127	1129
@@E730	001	00C7	1129	1131
@@E732	001	00C8	1131	1133
@@E752	001	00C9	1133	1135
@@E753	001	00CA	1135	1137
@@E754	001	00CB	1137	1139
@@E755	001	00CC	1139	1141
@@E756	001	00CD	1141	1143
@@E757	001	00CE	1143	1145
@@E758	001	00CF	1145	1147
@@E759	001	00D0	1147	1149
@@E760	001	00D1	1149	1151
@@E761	001	00D2	1151	1153
@@E762	001	00D3	1153	1155
@@E763	001	00D4	1155	1157
@@E764	001	00D5	1157	1159
@@E765	001	00D6	1159	1161
@@E766	001	00D7	1161	1163
@@E767	001	00D8	1163	1165
@@E768	001	00D9	1165	1167

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E769	001	00DA	1167	1169
@@E770	001	00DB	1169	1171
@@E771	001	00DC	1171	1173
@@E772	001	00DD	1173	1175
@@E773	001	00DE	1175	1177
@@E774	001	00DF	1177	1179
@@E775	001	00E0	1179	1181
@@E776	001	00E1	1181	1183
@@E777	001	00E2	1183	1185
@@E778	001	00E3	1185	1187
@@E779	001	00E4	1187	1189
@@E780	001	00E5	1189	1191
@@E781	001	00E6	1191	1193
@@E782	001	00E7	1193	1195
@@E783	001	00E8	1195	1197
@@E784	001	00E9	1197	1199
@@E785	001	00EA	1199	1201
@@E786	001	00EB	1201	1203
@@E790	001	00EC	1203	1205
@@E791	001	00ED	1205	1207
@@E792	001	00EE	1207	1209
@@E793	001	00EF	1209	1211
@@E794	001	00F0	1211	1213
@@E795	001	00F1	1213	1215
@@E796	001	00F2	1215	1217
@@E797	001	00F3	1217	1219
@@E798	001	00F4	1219	1221
@@E800	001	FFFF	1249	
@@E801	001	FFFF	1251	
@@E802	001	FFFF	1253	
@@E803	001	FFFF	1255	
@@E804	001	FFFF	1257	
@@E900	001	00F5	1221	1223
@@E901	001	00F6	1223	1225
@@E902	001	00F7	1225	1227
@@E903	001	00F8	1227	1229
@@E905	001	00F9	1229	1231
@@E906	001	00FA	1231	1233
@@E910	001	00FB	1233	
@ARR	001	0008	0016	2080* 2081 2082* 2083 2273
@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	2278 2284
@BM	001	0082	0054	
@BNE	001	0001	0046	2269
@BNH	001	0004	0044	
@BNL	001	0002	0045	
@BNM	001	0002	0057	
@BNOL	001	0020	0050	
@BNOZ	001	0008	0049	
@BNP	001	0004	0056	

CROSS REFERENCE																				
SYMBOL	LEN	VALUE	DEFN	REFERENCES													VER 15, MOD 00	16/07/22	PAGE	36
@BNZ	001	0001	0058																	
@BOL	001	00A0	0048																	
@BOZ	001	0088	0047																	
@BP	001	0084	0053																	
@BR	001	0001	0013	1925*	2076	2077	2079*	2080	2081	2082	2083	2085	2086	2086	2087					
				2089	2090	2092	2094	2094	2095	2095	2096	2098	2100	2101	2101					
				2102	2104	2106	2107	2107	2108	2108	2109	2109	2110	2117*	2137					
				2137	2139	2139	2140	2141	2142	2142	2143	2143	2144	2145	2145					
				2146	2147	2148	2148	2149	2151	2151	2152	2152	2153	2153	2154					
				2154	2155	2326	2333	2349	2356	2368	2375	2398	2406	2409	2414					
				2425	2435	2435*	2451	2460*	2461	2463	2463*	2465	2468							
@BT	001	0010	0051																	
@BZ	001	0081	0055																	
@B1	001	0001	0063																	
@CADDR	001	0002	0142	1951	1954	1963	1976	1987	1992	2086										
@CARDL	001	0060	0087	0644																
@CHARA	001	00C1	0072																	
@CHARF	001	00C6	0073																	
@CHARR	001	00D9	0074																	
@CHARZ	001	00E9	0075																	
@CLOFF	001	0010	0094																	
@CLON	001	0011	0093																	
@COMMA	001	006B	0066	2280																
@CPLUS	001	004E	0079	2451																
@DADDR	001	0002	0140	1969	1971	1980	1982	1990	2085											
@DBFR1	001	0004	0129	2152*																
@DBFR2	001	0005	0130																	
@DCALK	001	0001	0081																	
@DCBCY	001	0009	0115																	
@DCBT1	001	0050	0117																	
@DCNT	001	0003	0128	2134	2458*															
@DCST1	001	0040	0116																	
@DCTRL	001	0000	0125																	
@DCYL	001	0001	0126	2122																
@DD2	001	0003	0030																	
@DGET	001	0001	0134	1967	1989															
@DOLAR	001	005B	0068																	
@DOP2	001	0004	0028	2081*	2085*	2086*	2157	2158												
@DPLNG	001	0006	0132	2087	2121															
@DPOS	001	0000	0133																	
@DPUT	001	0002	0135	1978																
@DSAD	001	0002	0127	1956*	1957*	2123														
@DSBCY	001	0004	0106																	
@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																	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@EOFTC	001	0075	0162	
@EOS	001	001E	0076	1933 2286 2387 2395 2433
@FDDBC	001	0000	0195	2469*
@FDE1	001	000C	0200	2460
@FDFNA	001	000B	0198	
@FDHLN	001	0002	0208	
@FDLNC	001	0002	0193	
@FDNSC	001	0003	0210	
@FDSD	001	0000	0206	2460 2461 2465 2468
@FLACE	001	0009	0197	
@FLDBC	001	0001	0196	2469
@FLENT	001	0004	0201	2463
@FLFNA	001	0002	0199	
@FLHLN	001	0002	0209	
@FLLNC	001	0002	0194	
@FLNSC	001	0001	0211	
@FLSD	001	0001	0207	2461 2465 2468
@HDRLN	001	0007	0092	0672 1812
@IAR	001	0010	0017	
@INDEX	001	0001	0156	0157
@INST3	001	0003	0032	
@INST4	001	0004	0033	
@INST5	001	0005	0034	
@INST6	001	0006	0035	
@I1IAR	001	00C0	0020	
@LINSZ	001	00F4	0084	0646
@MAPEN	001	0005	0089	
@MINCR	001	2000	0083	
@MINUS	001	0060	0080	
@NOP	001	0080	0040	2090
@NUMBR	001	007B	0070	
@OPD2	001	0004	0029	
@OP1	001	0003	0027	2077* 2083* 2273* 2304* 2309*
@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	2089* 2090* 2100* 2106* 2132 2133 2135 2144* 2146 2292
@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	
@SCTSΖ	001	0100	0100	
@SDFLN	001	0007	0090	
@SDF0	001	0000	0166	
@SDF1	001	0001	0167	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@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	2144 2270 2281
@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	
@VQ	001	0001	0025	
@WSFIT	001	0500	0101	
@WSTBL	001	0503	0102	
@XR	001	0002	0014	1923 1926* 1928 1933 1950 1953 1956 1956 1957 1957 1959 1959 2274 2277 2277* 2278 2280 2283 2283* 2284 2286 2288 2304 2309 2311 2314 2317 2320 2323 2326 2328 2333 2335 2335* 2341 2344 2351 2351* 2358 2358* 2363 2370 2370* 2377 2377* 2387 2395 2433 2443* 2448* 2455* 2457 2458 2458 2461 2465 2468
@ZERO	001	0000	0062	2089
DL4CYL	001	089C	2122	2094*
DL4C01	002	08A2	2130	2080 2082 2094
DL4C05	002	08A4	2131	2086
DL4C24	003	0873	2133	2107
DL4C48	003	0860	2135	2101 2142 2148
DL4C96	003	084F	2132	2095
DL4DPL	006	08A0	2121	2087*
DL4EFD	001	0001	2128	2100 2146
DL4END	001	08E2	2159	
DL4ETB	001	0080	2129	2106
DL4E01	001	0001	2127	2102
DL4E24	001	0018	2126	2104
DL4E48	001	0030	2125	2098 2140
DL4E96	001	0060	2124	2092
DL4ICS	001	0826	2075	1950 1953
DL4LST	001	089B	2120	2113 2122 2123 2134 2152*
DL4SAV	005	083D	2158	2145* 2148* 2151
DL4SCD	001	089D	2123	2092 2095* 2098 2101* 2104 2107* 2108 2108* 2109 2109* 2110* 2139 2145 2151* 2153*
DL4SCT	001	089E	2134	2102 2137 2143* 2152 2153 2154*
DL4SPT	004	08A5	2138	2103
DL4WRK	005	083E	2157	2137* 2139* 2140 2142* 2143 2154
DL4010	001	082A	2078	2076 2079



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
DL4020	005	083A	2085	2081* 2157 2158
DL4030	005	0843	2087	2085* 2086*
DL4035	003	0848	2089	2155
DL4040	003	084E	2092	2096 2132
DL4050	003	085F	2098	2093 2135
DL4060	003	086C	2102	2099
DL4070	003	0872	2104	2133 2141 2147 2149
DL4080	004	087F	2108	2105
DL4100	003	0887	2110	2089* 2100* 2106* 2146
DL4200	003	0890	2115	2090* 2144*
DL4500	004	08A5	2137	2138
DL4600	004	08CF	2151	2115
DL4900	004	0893	2117	2077*
DL4920	004	0897	2118	2083*
KRLAB	001	0707	1922	
KRLACD	001	00C1	2484	2320
KRLARY	003	0A7D	2516	2344 2363
KRLATS	001	007C	2482	2314
KRLCSZ	001	0816	1973	1956 1957 1959 2457* 2458
KRLDOL	001	005B	2481	2311 2341
KRLDSH	001	0060	2480	1928
KRLD01	001	0000	2498	2326*
KRLD02	001	0001	2499	2333* 2349* 2356* 2368* 2375* 2406 2409 2414 2425
KRLFSZ	001	0825	1994	1959* 2461* 2465 2468*
KRLHX0	001	00F0	2486	2328
KRLHX9	001	00F9	2487	
KRLIND	001	0A7A	2512	2306 2392 2397* 2431*
KRLLA0	001	0004	2493	2370
KRLLAR	001	0003	2495	2344 2363 2516
KRLLC0	001	0005	2494	2351
KRLLCV	001	0002	2492	2358
KRLLLT	001	0002	2491	2335
KRLLSL	001	0001	2490	2377
KRLONE	001	0001	2488	2326 2333 2398 2425
KRLOPL	001	081F	1989	1963
KRLOGR	001	07F3	1813	1946
KRLPND	001	007B	2483	2317
KRLRPL	001	0813	1967	1951 1956*
KRLTBF	001	0900	2175	1976 1987
KRLTBL	001	0707	1812	1813 1925
KRLTWO	001	0002	2489	2435 2451*
KRLTYP	001	0A7E	2517	2398* 2403 2417 2420 2425
KRLWPL	001	0819	1978	1954 1957* 2458*
KRLZCD	001	00E9	2485	2323
KRL000	001	0000	2476	1928 1933 2311 2314 2317 2320 2323 2326 2387 2395 2433
KRL001	001	0001	2477	2328 2333 2341 2398
KRL003	001	0003	2478	2363
KRL004	001	0004	2479	2344
KRL050	004	0727	1940	1929
KRL060	004	072E	1943	1934
KRL070	004	0732	1944	1941
KRL080	003	07F3	1950	1923 1960 2455 2471
KRL084	001	0814	1968	1970
KRL088	001	0816	1972	1974
KRL092	001	081A	1979	1981
KRL096	001	081C	1983	1985



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
KRL100	004	0941	2304	1938 2436
KRL105	003	0950	2311	2307
KRL110	004	096E	2326	2312 2315 2318
KRL120	003	0982	2341	2329
KRL122	003	0999	2356	2345
KRL125	005	09A2	2363	2342
KRL127	003	09B3	2375	2364
KRL130	004	09B9	2382	2336 2352 2359 2371
KRL135	004	09C9	2392	2385
KRL140	004	09E2	2403	2393
KRL150	003	09F8	2414	2404
KRL160	005	0A0F	2425	2415
KRL170	004	0A17	2431	2407 2412 2418 2423
KRL180	003	0A21	2435	2399
KRL2ND	001	0001	2496	2306 2392 2397 2431
KRL200	004	0A28	2440	2321 2324 2388
KRL210	004	0A2F	2443	2309* 2410 2421 2426
KRL220	004	0A3A	2447	2396
KRL230	004	0A3E	2448	2304* 2441
KRL240	004	0A42	2449	2384 2445
KRL250	003	0A46	2451	2434
KRL300	003	0A5E	2463	2470
KRL310	006	0A6C	2469	2466
KRL400	001	0A7A	2511	2513
SCACNT	002	0940	2298	2288* 2289*
SCACOF	001	0087	2270	
SCACOM	001	0001	2269	1936
SCAINC	001	0001	2268	2277 2283
SCAMMA	003	091D	2292	1936*
SCANIT	001	0900	2272	1931 2382
SCASVE	002	093E	2297	2274* 2289
SCASV1	001	093D	2296	
SCA100	003	090F	2277	2279
SCA200	003	0912	2278	2276
SCA250	003	091C	2281	2292
SCA300	003	091F	2283	2285
SCA400	004	092F	2288	2281
SCA500	004	0939	2291	2273* 2287
SVACAC	001	0002	2507	2349
SVACVC	001	0004	2505	2356
SVALDC	001	0010	2504	2403 2406 2414 2417
SVALVC	001	0001	2503	2375 2409 2420
SVANAC	001	0008	2506	2368

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #KRLAB IS 2816 DECIMAL.  
OL103 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 6  
NAME-#KRLAB,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-R,CATEGORY-000