

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	03/03/22	PAGE	2
0000		1	#KKEYS	START	0				
		2		PRINT	ON,NODATA				
		3	*	@SYS	EXP-N				
		214+		PRINT	ON				
		215	*	@FXD	EXP-N				
		620+		PRINT	ON				
		621	*	@CAN	EXP-N				
		622	*	@ERM	EXP-N				
		1244+		PRINT	ON				
		1245	*	@SPF	EXP-N				
		1708+		PRINT	ON				
		1709	*	@DIR	EXP-N				
		1710	*	@VOL	EXP-N				
		1711	*	@HDW	EXP-N				
		1712	*	@B@E	EXP-N				
		1713	*	\$I\$E	EXP-N				

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	03/03/22	PAGE	4
			1716		*****				
			1717	*	5703-XM1	COPYRIGHT IBM CORP, 1970			*
			1718	*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083			*
			1719	*					*
			1720		*****				
			1721	*	STATUS				*
			1722	*	VERSION 1 MODIFICATION 0				*
			1723	*					*
			1724	*	FUNCTION				*
			1725	*	#KKEYS LISTS, ASSIGNS, OR RESTORES THE FUNCTIONS OF THE COMMAND				*
			1726	*	KEYS. DEPENDING ON THE PARAMETERS SPECIFIED -				*
			1727	*	* LIST				*
			1728	*	* RESTORE SINGLE KEY				*
			1729	*	* RESTORE ALL KEYS				*
			1730	*	* ASSIGN SINGLE KEY				*
			1731	*					*
			1732	*	ENTRY POINTS				*
			1733	*	KKEYS HAS ONLY ONE ENTRY POINT, \$KKEYS, THE FIRST EXECUTABLE				*
			1734	*	INSTRUCTION. KKEYS IS ENTERED THROUGH THE COMMAND ANALYSER.				*
			1735	*					*
			1736	*	INPUT				*
			1737	*					*
			1738	*	OUTPUT				*
			1739	*					*
			1740	*	EXTERNAL REFERENCES				*
			1741	*	SXRSV - COMMAND LINE POINTER SAVE AREA				*
			1742	*	\$XINDI - SYSTEM EXECUTION INDICATOR				*
			1743	*	\$DISKN - SYSTEM DISK IOCR				*
			1744	*	SRLOAD - SYSTEM LOADER ENTRY				*
			1745	*	SCAERK - SYSTEM ERROR MESSAGE ROUTINE				*
			1746	*	\$CAERR - SCAERK ERROR CODE PARAMETER				*
			1747	*	SCANIT - COMMAND LINE DELIMITER SCAN ROUTINE				*
			1748	*	KSOVRL - SET EXECUTION ROUTINE				*
			1749	*					*
			1750	*	EXITS, NORMAL				*
			1751	*	* KKEYS HAS ONLY 1 NORMAL EXIT				*
			1752	*	\$RLOAD - AFTER PROPER SYNTAX HAS BEEN ASSURED				*
			1753	*					*
			1754	*	EXITS, ERROR				*
			1755	*	SCAERK - WITH ERROR CODES				*
			1756	*	@@E131 - INVALID PARAMETER				*
			1757	*	@@E133 - TOO MANY <PARAMETERS>				*
			1758	*	@@E139 - INVALID <DELIMITER>				*
			1759	*	@@E415 - INVALID COMMAND KEY				*
			1760	*	@@E417 - INVALID COMMAND SPECIFICATION				*
			1761	*					*
			1762	*	TABLES/WORK AREAS				*
			1763	*	COMMAND KEY TABLE (##CKTB) THIS TABLE RESIDES IN THE SYSTEM				*
			1764	*	PROGRAM FILE.				*
			1765	*					*
			1766	*	ATTRIBUTES				*
			1767	*	N/A				*
			1768	*					*
			1769	*	CHARACTER CODE DEPENDENCY				*
			1770	*					*
			1771	*	NOTES -				*

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	03/03/22	PAGE	5
		1772	*	ERROR PROCEDURES				*
		1773	*	* ERROR CODE IS SET AT \$CAERR				*
		1774	*	* @XR IS LEFT POINTING TO THE ERROR BYTE IN THE PRIMARY				*
		1775	*	INPUT BUFFER				*
		1776	*					*
		1777	*	REGISTER USAGE				*
		1778	*	* BOTH REGISTERS ARE USED DURING EXECUTION				*
		1779	*	* THE REGISTERS ARE NOT SAVED OR RESTORED				*
		1780	*					*
		1781	*	SAVED/RESTORED AREAS				*
		1782	*	NONE				*
		1783	*					*
		1784	*	MODIFICATION CONSIDERATIONS				*
		1785	*					*
		1786	*	REQUIRED MODULES				*
		1787	*	@SYSEQ - COMMON SYSTEM EQUATES				*
		1788	*	@FXDEO - SYSTEM NUCLEUS ADDRESSES AND INDICATORS				*
		1789	*	@CANEQ - SYSTEM LOCATION EQUATES				*
		1790	*	@ERMEQ - GENERAL ERROR MESSAGE EQUATES				*
		1791	*	@SPFEQ - SYSTEM PROG FILE EQUATES				*
		1792	*	\$B\$EQU - COMPILER FIXED EQUATES				*
		1793	*	\$B@EQU - COMPILER SYSTEM EQUATES				*
		1794	*	\$I\$EQU - INTERPRETER FIXED EQUATES				*
		1795	*	SCANIT - COMMAND LINE DELIMETER SCAN ROUTINE				*
		1796	*					*
		1797	*	OTHER				*
		1798	*	NONE				*
		1799	*	*****				*

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 6
					1801	*	HDR #KKEYS,0	
					1802		*****	
					1803	*	PROGRAM HEADER FOR DISK LOAD	
					1804		*****	
					1805	*#\$KKEY EQU	X'2100'	DISK ADDR OF #KKEYS
					1806	*#\$KKE EQU	X'0C00'	CORE LOAD ADDRESS OF #KKEYS
					1807	*#\$@KKE EQU	006	SECTOR CNT OF #KKEYS
	0C00				1808		ORG #\$\$\$KKE	CORE LOAD ADDRESS
				0C00	1809	\$\$\$\$\$S EQU	*	FIRST LOCATION IN PROGRAM
	0C00	7BD2D2C5E8E2		0C05	1810		DC CL6'#KKEYS'	PROGRAM NAME
	0C06	6A		0C06	1811		DC IL1'106'	PROGRAM NUMBER OF #KKEYS
				0C07	1812	\$KKEYS EQU	*	ENTRY POINT TO PROGRAM
					1813		*** END OF EXPANSION ***	
				0E76	1815		USING KKECKD,@BR	SET BASE REGISTER FOR ADDRESSING
	0C07	35 02 03C7			1816		L \$XRSAB,@XR	POINT XR TO INPUT LINE BFR
					1817	*		
	0C0B	C0 87 051A			1818		B \$LOADR	READ IN COMMAND KEY TABLE
	0C0F	0E76		0C10	1819		DC AL(@CADDR)(KKECKD)	
					1820	*		
	0C11	35 02 03C7			1821		L \$XRSAB,@XR	RESTORE XR
	0C15	C2 01 0E76			1822		LA KKECKD,@BR	LOAD BASE REGISTER
	0C19	38 08 03DD			1823		TBN \$CONFIG,\$16CKY	16 COMMAND KEYS ON SYSTEM ?
	0C1D	F2 90 04			1824		JF KKE050	NO, CONTINUE
	0C20	3C 0B 0E94			1825		MVI KKECNF,KKEBCK	SET 11 KEYS AVAILABLE
					1826	*		
	0C24	3C 18 03CD			1827	KKE050	MVI \$CAERR,@E139	SET ERR CODE FOR INV DELIM
	0C28	BD 60 00			1828		CLI 0(,@XR),@MINUS	KEYWORD FOLLOWED BY '-' ?
	0C2B	F2 81 23			1829		JE KKE070	IF '-', CALL ERR PROGRAM
					1830	*		
	0C2E	C0 87 1000			1831		B SCANIT	BYPASS BLANKS
	0C32	BD 1E 00			1832		CLI 0(,@XR),@EOS	END OF STATEMENT ?
	0C35	F2 81 5D			1833		JE KKE350	YES, GO LIST CONTENTS OF TABLE
					1834	*		
	0C38	6D 03 16 03			1835		CLC KKELIS(KKELIL,@BR),KKELIL-1(,@XR)	'LIST' PARAM ?
	0C3C	F2 81 4B			1836		JE KKELST	YES, GO LIST KEY ASSIGNMENTS
					1837	*		
	0C3F	6D 06 1D 06			1838		CLC KKERES(KKEREL,@BR),KKEREL-1(,@XR)	'RESTORE' PARAM ?
	0C43	C0 81 0DE0			1839		BE KKE860	YES, GO RESTORE ALL KEYS
					1840	*		
	0C47	BD F0 00			1841		CLI 0(,@XR),@DZERO	IS A KEY NUMBER SPECIFIED ?
	0C4A	F2 02 A2			1842		JNL KKEASN	YES, GO PROCESS
	0C4D	3C 11 03CD			1843		MVI \$CAERR,@E131	ELSE, SET ERR CODE FOR INV PARAM
	0C51	C0 87 0469			1844	KKE070	B \$CAERK	CALL ERROR PROGRAM
					1846		*****	
					1847	*	ROUTINE TO SYNTAX-CHECK REST OF LINE	*
					1848		*****	
	0C55	34 08 0C89			1849	KKE100	ST KKE180+@OP1,@ARR	SAVE RETURN ADDRESS
	0C59	3C 01 101D			1850		MVI SCAMMA,SCACOM	SET SCANIT TO ALLOW A COMMA
	0C5D	C0 87 1000			1851		B SCANIT	BYPASS DELIMITERS
	0C61	F2 81 10			1852		JZ KKE120	IF NONE, GO CHECK FOR EOS
	0C64	F2 82 1B			1853		JL KKE160	ERROR IF DANGLING COMMA
	0C67	3C 12 03CD			1854		MVI \$CAERR,@E133	SET ERR CODE FOR TOO MANY PARAMS
	0C6B	BD 1E 00			1855		CLI 0(,@XR),@EOS	END-OF-STATEMENT ?
	0C6E	F2 01 11			1856		JNE KKE160	NO, EXIT TO ERROR PROGRAM

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE	7
	0C71	F2	87	12	1857		J KKE180				ELSE, TAKE NORMAL EXIT
					1858	*					
	0C74	BD	1E	00	1859	KKE120	CLI 0(,@XR),@EOS				END-OF-STAIEMENT ?
	0C77	F2	81	0C	1860		JE KKE180				YES, TAKE NORMAL EXIT
					1861	*					
	0C7A	3C	11	03CD	1862		MVI \$CAERR,@E131				SET INV PARAM ERROR CODE
	0C7E	C2	02	0000	1863	KKE140	LA *-*,@XR				POINT XR TO PARAM
	0C82	C0	87	0469	1864	KKE160	B \$CAERK				EXIT TO ERROR PROGRAM
	0C86	C0	87	0000	1865	KKE180	B *-*				RETURN TO POINT WHERE CALLED

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 8
					1867	*****	*****	
					1868	*	THE FOLLOWING ACTION LISTS THE COMMAND KEY	*
					1869	*	ASSIGNMENTS ON THE SYSTEM OUTPUT DEVICE	*
					1870	*****	*****	
				0C8A	1871	KKELST EQU	*	SECTION TO LIST
0C8A	34	02	0C81		1872	ST	KKE140+@OP1,@XR	SAVE POINTER TO PARAM
0C8E	E2	02	04		1873	LA	KKELIL(,@XR),@XR	POINT XR PAST PARAMETER 'LIST'
0C91	C0	87	0C55		1874	B	KKE100	SYNTAX-CHECK REST OF LINE
					1875	*		
0C95	C2	02	1200		1876	KKE350 LA	KKETBL,@XR	POINT XR TO COMMAND KEY TABLE
					1877	*		
0C99	3C	80	0476		1878	KKE400 MVI	\$CIMSK,@NOP	MASK IR
0C9D	C0	87	0465		1879	B	\$SPRNT	PRINT KEY NUMBER
0CA1	0E7C			0CA2	1880	DC	AL(@CADDR)(KKENOD)	
					1881	*		
0CA3	BD	00	00		1882	KKE420 CLI	0(,@XR),@ZERO	COMMAND LENGTH A ?
0CA6	F2	01	1B		1883	JNE	KKE450	NO, GO PRINT COMMAND
					1884	*		
0CA9	7D	F4	10		1885	CLI	KKENUM(,@BR),KKEF04	PRINTING CMDKEY 4 ?
0CAC	F2	82	09		1886	JL	KKE430	IF LOW, MUST BE DCALC
0CAF	F2	84	0C		1887	JH	KKE440	IF HIGH, MUST BE SYSTEM EDIT
					1888	*		
0CB2	7C	0C	0B		1889	MVI	KKEPPL+@PRCNT(,@BR),KKELK4	SET LINE EDITING LENGTH IN PPL
0CB5	F2	87	10		1890	J	KKE460	GO PRINT LINE
					1891	*		
0CB8	7C	05	0B		1892	KKE430 MVI	KKEPPL+@PRCNT(,@BR),KKELK1	SET DCALC LENGTH IN PPL
0CBB	F2	87	0A		1893	J	KKE460	GO PRINT LINE
					1894	*		
0CBE	7C	0B	0B		1895	KKE440 MVI	KKEPPL+@PRCNT(,@BR),KKELK7	SET SYSTEM EDIT LENGTH IN PPL
0CC1	F2	87	04		1896	J	KKE460	GO PRINT LINE
					1897	*		
0CC4	6C	00	0B 00		1898	KKE450 MVC	KKEPPL+@PRCNT(1,@BR),0(,@XR)	SET COUNT IN PPL
0CC8	C0	87	0465		1899	KKE460 B	\$SPRNT	PRINT COMMAND
0CCC	0E80			0CCD	1900	DC	AL(@CADDR)(KKEPPL)	
					1901	*		
0CCE	C0	87	048D		1902	B	\$UNMSK	ALLOW INTERRUPTS
0CD2	56	10	10 1F		1903	AZ	KKENUM(KKEL02,@BR),KKED01(1,@BR)	ADD C'1' TO KEY NR
0CD6	5E	01	0D 21		1904	ALC	KKEPPL+@PDATA(@CADDR,@BR),KKE90(,@BR)	INCR BFR TO NEXT
0CDA	E2	02	01		1905	LA	1(,@XR),@XR	POINT XR TO NEXT CMD COUNT
0CDD	5F	00	1E 22		1906	SLC	KKECNF(1,@BR),KKEONE(,@BR)	SUBTRACT 1 FROM COUNTER
0CE1	C0	01	0C99		1907	BNZ	KKE400	KEEP PRINTING IF NON-ZERO
					1908	*		
0CE5	C0	87	0465		1909	B	\$SPRNT	WAIT ON PRINTER
0CE9	057F			0CEA	1910	DC	AL(@CADDR)(\$WAITF)	TO FINISH LAST LINE
					1911	*		
0CEB	C0	87	04A1		1912	B	\$CARPL	EXIT TO LOAD #GUFUD
					1913	*		
					1914	*****	*****	

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE	9
					1916		*****				
					1917	*	THE FOLLOWING ACTION WILL ASSIGN A COMMAND TO				*
					1918	*	THE SPECIFIED COMMAND KEY.				*
					1919		*****				
				0CEF	1920	KKEASN	EQU *				
		0CEF	34 02 0D7C		1921		ST KKE680+@OP1,@XR				SAVE XR IN CASE NEEDED
		0CF3	C0 87 1041		1922		B C4BIN2				CONVERT KEY TO BINARY
		0CF7	F2 82 7F		1923		JL KKE680				ERROR IF MORE THAN 4 DIGITS
					1924	*					
		0CFA	3D 00 10AA		1925	KKE500	CLI C4BVAL-1,@ZERO				CK SPECIFIED => 256 ?
		0CFE	F2 01 0F		1926		JNE KKE510				YES, INVALID - GIVE ERROR
		0D01	3D 00 10AB		1927		CLI C4BVAL,@ZERO				CK SPECIFIED = 0 ?
		0D05	F2 81 08		1928		JE KKE510				YES, INVALID - 0 NOT A CK
		0D08	1D 00 10AB 1E		1929		CLC C4BVAL,KKECNF(1,@BR)				AVAILABLE KEY SPECIFIED ?
		0D0D	F2 04 07		1930		JNH KKE520				YES, GO CONTINUE PROCESSING CMD
					1931	*					
		0D10	3C 5E 03CD		1932	KKE510	MVI \$CAERR,@E415				SET ERROR CODE - INV CMD KEY
		0D14	F2 87 95		1933		J KKE750				CALL ERROR PROGRAM
					1934	*					
		0D17	3C 01 101D		1935	KKE520	MVI SCAMMA,SCACOM				SET SCANIT TO BYPASS A COMMA
		0D1B	4C 00 24 10AB		1936		MVC KKEVAL(1,@BR),C4BVAL				SAVE KEY NUMBER
		0D20	C0 87 1000		1937		B SCANIT				BYPASS BLANKS AND COMMA
		0D24	F2 82 88		1938		JL KKE760				CALL ERR FROG IF DANGLING COMMA
		0D27	F2 84 09		1939		JH KKE540				JUMP IF VALID DELIMITER FOUND
					1940	*					
		0D2A	BD 1E 00		1941		CLI 0(,@XR),@EOS				END-OF-STATEMENT ?
		0D2D	F2 81 C3		1942		JE KKE870				YES, GO RESTORE THIS KEY
		0D30	F2 87 42		1943		J KKE660				ELSE, GIVE 'INV PARAM' ERROR
					1944	*					
		0D33	BD 1E 00		1945	KKE540	CLI 0(,@XR),@EOS				EOS PRECEDED BY BLANKS(S) ?
		0D36	F2 81 BA		1946		JE KKE870				YES, GO RESTORE THIS KEY
					1947	*					
		0D39	6D 06 1D 06		1948		CLC KKERES(KKEREL,@BR),KKEREL-1(,@XR) 'RESTORE' PARAM ?				
		0D3D	F2 81 A8		1949		JE KKE865				YES, GO RESTORE THIS KEY
		0D40	34 02 0D7C		1950	KKE600	ST KKE680+@OP1,@XR				SAVE XR IN CASE ERROR
		0D44	BD 7D 00		1951		CLI 0(,@XR),KKEQUO				QUOTE ?
		0D47	F2 01 2B		1952		JNE KKE660				NO, GO SET INV PARAM ERR CODE
					1953	*					
		0D4A	3C 00 1102		1954	KKE640	MVI SCSLNG,@ZERO				SET TO RETURN ENTIRE STRING
		0D4E	3C 40 1659		1955		MVI KKECMD+KKEL90-1,@BLANK				SET LAST BYTE OF BFR TO BLANK
		0D52	0C 58 1658 1659		1956		MVC KKECMD+KKEL90-2(KKEL90-1),KKECMD+KKEL90-1				CLEAR WHOLE BFR
					1957	*					
		0D58	C0 87 10B1		1958		B SCSTRG				GO PROCESS COMMAND STRING
		0D5C	1600	0D5D	1959		DC AL(@CADDR)(KKECMD)				CADDR OF BUFFER FOR STRING
		0D5E	F2 84 18		1960		JH KKE680				ERROR IF INCOMPLETE STRING
					1961	*					
		0D61	C0 87 1000		1962		B SCANIT				BYPASS BLANKS AND COMMA
		0D65	F2 82 47		1963		JL KKE760				ERR IF DANGLING COMMA
					1964	*					
		0D68	BD 1E 00		1965		CLI 0(,@XR),@EOS				END OF STATEMENT ?
		0D6B	F2 81 19		1966		JE KKE720				YES, CMD TERMINATED CORRECTLY
					1967	*					
		0D6E	3D 00 1040		1968		CLI SCACNT,@ZERO				ANY DELIMITERS FOUND ?
		0D72	F2 01 0B		1969		JNE KKE700				YES, ERR - TOO MANY PARAMS
					1970	*					
		0D75	3C 11 03CD		1971	KKE660	MVI \$CAERR,@E131				SET 'INV PARAM' ERROR CODE

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 10
		1972	*			
0D79	C2 02 0000	1973	KKE680	LA	*-*,@XR	RESTORE XR TO FIRST OF STRING
0D7D	F2 87 2F	1974		J	KKE760	GO CALL ERROR PROGRAM
		1975	*			
0D80	3C 12 03CD	1976	KKE700	MVI	\$CAERR,@E133	SET 'TOO MANY PARAMS' ERR CODE
0D84	F2 87 28	1977		J	KKE760	GO CALL ERROR PROGRAM
		1978	*			
0D87	C2 02 1600	1979	KKE720	LA	KKECMD,@XR	PT XR TO STRING IN CASE NEEDED
0D8B	3D 5A 1126	1980		CLI	SCSCNT,KKEL90	STRING > 90 CHARACTERS ?
0D8F	F2 84 16	1981		JH	KKE740	ERROR IF YES
		1982	*			
0D92	4C 00 23 1126	1983		MVC	KKELCC(,@BR),SCSCNT(1)	SAVE COMMAND LENGTH
0D97	BD 40 00	1984	KKE730	CLI	0(,@XR),@BLANK	BLANK ?
0D9A	F2 01 16	1985		JNE	KKE780	NO, GO PLACE CMD IN TABLE
0D9D	E2 02 01	1986		LA	1(,@XR),@XR	PT XR TO NEXT ITEM IN STRING
0DA0	5F 00 23 22	1987		SLC	KKELCC(1,@BR),KKEONE(,@BR)	DECR COUNTER BY ONE
0DA4	C0 84 0D97	1988		BP	KKE730	GO CHECK NEXT CHAR FOR BLANK
		1989	*			
0DA8	3C 5F 03CD	1990	KKE740	MVI	\$CAERR,@E417	SET ERR CODE- INVALID STRING
0DAC	D2 02 00	1991	KKE750	LA	0(,@BR),@XR	SET XR OUT OF I/P LN BFR
0DAF	C0 87 0469	1992	KKE760	B	\$CAERK	ABORT LOADER, PRINT ERROR MSG

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 11
				1994		*****		
				1995	*		PLACE THE SPECIFIED COMMAND STRING IN THE TABLE,	*
				1996	*		REWRITE THE TABLE TO DISK AND EXIT.	*
				1997		*****		
0DB3	C2	02	1200	1998	KKE780	LA	KKETBL,@XR	SET XR AS POINTER TO CMD COUNT
				1999		DROP	@BR	
0DB7	C2	01	1222	2000		LA	KKETCM,@BR	SET BR AS POINTER TO COMMAND
				2001	*			
0DBB	3D	01	10AB	2002	KKE800	CLI	C4BVAL,@B1	COMMAND KEY ? 1 YET ?
0DBF	F2	81	11	2003		JE	KKE820	YES, GO PUT CNT AND CMD IN TBL
				2004	*			
0DC2	E2	02	01	2005		LA	1(,@XR),@XR	ELSE, INCREMENT POINTERS TO THE
0DC5	36	01	0E97	2006		A	KKEX90,@BR	* NEXT AVAILABLE TBL LOCATION
0DC9	0F	00	10AB 0E98	2007		SLC	C4BVAL(1),KKEONE	DECR CMD KEY BY ONE
0DCF	C0	87	0DBB	2008		B	KKE800	GO CHECK FOR THIS KEY
				2009	*			
0DD3	8C	00	00 1126	2010	KKE820	MVC	0(1,@XR),SCSCNT	SET LENGTH OF COMMAND IN TABLE
				2011	*			
0DD8	4C	59	59 1659	2012	KKE840	MVC	KKEL90-1(KKEL90,@BR),KKECMD+KKEL90-1	MOVE CMD IN TABLE
				2013	*			
0DDD	F2	87	88	2014		J	KKE980	GO WRITE TABLE BACK TO DISK
				2015		*****		

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 12
				2017		*****	*****	
				2018	*		RESTORE ALL THE AVAILABLE COMMAND KEYS	*
				2019		*****	*****	
0DE0	3C	80	0E4C	2020	KKE860	MVI	KKE970+@Q,@NOP	SET SWITCH TO RESTORE ALL KEYS
0DE4	3C	01	10AB	2021		MVI	C4BVAL,KKECC1	PROCESS CMD KEY 1 FIRST
				2022	*			
0DE8	34	02	0C81	2023	KKE865	ST	KKE140+@OP1,@XR	SAVE POINTER TO PARAM
0DEC	E2	02	07	2024		LA	KKEREL(,@XR),@XR	POINT XR PAST 'RESTORE' PARAM
0DEF	C0	87	0C55	2025		B	KKE100	SYNTAX CHECK REST OF LINE
				2026	*			
				2027	*****	*****	*****	
				2028	*		RESTORE THE SPECIFIED COMMAND KEY ONLY	*
				2029	*****	*****	*****	
0DF3	C2	02	0E9C	2030	KKE870	LA	KKERK1,@XR	POINT XR TO COMMAND FUNCTION BFR
0DF7	C2	01	1222	2031		LA	KKETCM,@BR	POINT BR TO INTERNAL RESTORE TBL
				2032	*			
0DFB	3D	01	0E9A	2033	KKE880	CLI	KKEVAL,KKECC1	DECREMENTED TO CK1 YET ?
0DFF	F2	81	14	2034		JE	KKE910	YES, GO PROCESS CMD LENGTH
				2035	*			
0E02	0F	00	0E9A 0E98	2036		SLC	KKEVAL(1),KKEONE	ELSE DECR KEY NUMBER BY ONE
0E08	36	01	0E97	2037	KKE890	A	KKEX90,@BR	POINT BR TO NEXT COMMAND SLOT
0E0C	B6	02	00	2038		A	0(,@XR),@XR	POINT XR TO NEXT INTERNAL CMD
0E0F	E2	02	02	2039		LA	KKEL02(,@XR),@XR	ADJUST BY TWO
0E12	C0	87	0DFB	2040	KKE900	BC	KKE880,@UCB+*-*	UCH UNLESS RESTORE ALL SPECIFIED
				2041	*			* AND THIS KEY = CK1
0E16	2C	00	0E41 00	2042	KKE910	MVC	KKE940+@Q(1),0(,@XR)	SAVE COMMAND LENGTH
0E1B	3D	01	10AB	2043		CLI	C4BVAL,KKECC1	CK1 ?
0E1F	F2	81	0E	2044		JE	KKE920	YES, GO SET LENGTH TO ZERO
0E22	3D	04	10AB	2045		CLI	C4BVAL,KKECC4	CK4 ?
0E26	F2	81	07	2046		JE	KKE920	YES, GO SET LENGTH TO ZERO
0E29	3D	07	10AB	2047		CLI	C4BVAL,KKECC7	CK7 ?
0E2D	F2	01	04	2048		JNE	KKE930	NO, NOT A SPECIAL KEY
0E30	3C	00	0E41	2049	KKE920	MVI	KKE940+@Q,@ZERO	SET COMMAND LENGTH TO ZERO
0E34	34	01	0E46	2050	KKE930	ST	KKE950+@OP1,@BR	SAVE BR
0E38	C2	01	11FF	2051		LA	KKECK1-1,@BR	POINT BR TO LEFT OF CMD LENGTHS
0E3C	36	01	10AB	2052		A	C4BVAL,@BR	DISPLACE TO SPECIFIED CMD LENGTH
				2053	*			
0E40	7C	00	00	2054	KKE940	MVI	0(,@BR),*-*	SET COMMAND LENGTH IN TABLE
				2055	*			
0E43	C2	01	0000	2056	KKE950	LA	*-*,@BR	RESTORE BR
0E47	6C	59	59 5A	2057	KKE960	MVC	KKEL90-1(KKEL90,@BR),KKEL90(,@XR)	MOVE CMD IN TABLE
				2058	*			
0E4B	F2	87	1A	2059	KKE970	JC	KKE980,@UCB+*-*	NOP IF RESTORE ALL SPECIFIED
				2060	*			
0E4E	0E	00	10AB 0E98	2061		ALC	C4BVAL(1),KKEONE	COMPUTE NEXT KEY NUMBER
0E54	0C	00	0E9A 10AB	2062		MVC	KKEVAL(1),C4BVAL	SAVE THIS VALUE
0E5A	3C	80	0E13	2063		MVI	KKE900+@Q,@NOP	SET SW TO INCR POINTERS ONLY
				2064	*			
0E5E	0D	00	0E9A 0E94	2065		CLC	KKEVAL(1),KKECNF	ALL AVAILABLE KEYS PROCESSED ?
0E64	C0	04	0E08	2066		BNH	KKE890	NO, CONTINUE PROCESSING
				2068	*****	*****	*****	
				2069	*		REWRITE THE COMMAND KEY TABLE TO DISK	*
				2070	*****	*****	*****	
0E68	3C	02	0E76	2071	KKE980	MVI	KKECKD+@DCTRL,@DPUT	SET DPL TO WRITE
0E6C	C0	87	051A	2072		B	\$LOADR	WRITE TABLE BACK TO DISK

[illegible]

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE 14
				2079		*****				
				2080	*	EQUATES				*
				2081		*****				
		0005		2082	KKEL05	EQU	5			LENGTH OF PRINT LIST FOR CK
		0002		2083	KKEL02	EQU	2			LENGTH OF CMD KEY FIELD
		00F4		2084	KKEF04	EQU	X'F4'			DECIMAL 4 FOR CMD KEY 4
		0008		2085	KKE8CK	EQU	8			EIGHT COMMAND KEYS
		000B		2086	KKEBCK	EQU	11			ELEVEN COMMAND KEYS
		007D		2087	KKEQUO	EQU	X'7D'			QUOTE
		005A		2088	KKEL90	EQU	90			LENGTH OF A COMMAND FIELD
		0007		2089	KKEREL	EQU	7			LENGTH OF 'RESTORE' PARAMETER
		0004		2090	KKELIL	EQU	4			LENGTH OF 'LIST' PARAMETER
		0001		2091	KKECC1	EQU	1			BINARY FOR COMMAND KEY 1
		0004		2092	KKECC4	EQU	4			BINARY FOR COMMAND KEY 4
		0007		2093	KKECC7	EQU	7			BINARY FOR COMMAND KEY 7

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/03/22 PAGE 15

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2095 *****
2096 * AREA FOR CONSTANTS AND SAVE AREAS *
2097 *****
2098 *
2099 * DPL TO READ AND WRITE COMMAND KEY TABLE
2100 *
2101 *KKECKD DPL FUNC=@DGET,DADDR=$$CKT,CNT=$@#CK,CADDR=KKETBL
0E76 01 0E76 2102 KKECKD EQU * DISK PARAMETER LIST
0E77 2118 0E76 2103 DC AL1(@DGET) REQUESTED FUNCTION
0E79 04 0E78 2104 DC AL2($$CKT) DISK ADDRESS
0E7A 1200 0E79 2105 DC AL1($@#CK) SECTOR COUNT
0E7B 2106 DC AL2(KKETBL) BUFFER ADDRESS
2107 *** END OF EXPANSION ***

2109 * PPL TO PRINT THE COMMAND KEY NUMBER
2110 *KKENOD PPL FUNC=@PRINT,CNT=KKEL05,CADDR=KKEPP1
0E7C 40 0E7C 2111 KKENOD EQU * PPL ADDRESS
0E7D 05 0E7C 2112 DC AL1(@PRINT) FUNCTION REQUESTED
0E7E 0E84 0E7D 2113 DC AL1(KKEL05) PRINT COUNT
0E7F 2114 DC AL2(KKEPP1) DATA ADDRESS
2115 *** END OF EXPANSION ***

2117 * PPL TO PRINT COMMAND FIELD
2118 *KKEPPL PPL FUNC=@PRETR,CADDR=KKETCM+*-*
0E80 C0 0E80 2119 KKEPPL EQU * PPL ADDRESS
0E81 00 0E80 2120 DC AL1(@PRETR) FUNCTION REQUESTED
0E82 1222 0E81 2121 DC AL1(*-*) PRINT COUNT
0E83 2122 DC AL2(KKETCM+*-* ) DATA ADDRESS
2123 *** END OF EXPANSION ***

0E84 0E84 2125 KKEPP1 EQU * BUFFER FROM WHICH CMD KEY
0E84 2126 DS XL(KKEL05) * IS PRINTED --
0E84 2127 ORG KKEPP1 * INITIALIZED
0E84 40 0E84 2128 DC CL1' ' * TO
0E85 F0F1 0E86 2129 KKENUM DC DL(KKEL02)'01' * '01'
0E87 4040 0E88 2130 DC CL2' ' * KKENUM IS FIELD WHICH CHANGES
2131 *
2132 * PARAMETERS FOR 'KEYS' COMMAND
0E89 D3C9E2E3 0E8C 2133 KKELIS DC CL(KKELIL)'LIST' 'LIST' PARAMETER
0E8D D9C5E2E3D6D9C5 0E93 2134 KKERES DC CL(KKEREL)'RESTORE' 'RESTORE' PARAMETER
2135 *
0E94 0E94 2136 KKECNF DS XL1 COUNTER FOR NUMBER
0E94 2137 ORG KKECNF * OF AVAILABLE COMMAND KEYS
0E94 08 0E94 2138 DC AL1(KKE8CK) * INITIALIZED TO EIGHT
0E95 F1 0E95 2139 KKED01 DC DL1'1' DECIMAL INCR FOR CMD KEY
0E96 005A 0E97 2140 KKEX90 DC AL2(KKEL90) CONSTANT FOR LENGTH OF COMMAND
0E98 01 0E98 2141 KKEONE DC XL1'1' CONSTANT OF ONE
0E99 0E99 2142 KKELCC DS XL1 SAVE LENGTH OF CHAR-CON
0E9A 0E9A 2143 KKEVAL DS XL1 SAVE AREA FOR KEY NUMBER
0E9A 2144 ORG KKEVAL * INITIALIZED TO CMD KEY 1
0E9A 01 0E9A 2145 DC XL1'1' * FOR 'RESTORE' ALL

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#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 16
			2147	*	*****		
			2148	*	TABLE OF COMMAND KEY ORIGINAL FUNCTIONS,		*
			2149	*	USED TO RESTORE THE DEFAULT COMMAND KEYS		*
			2150	*	*****		
			0005	2151	KKELK1 EQU	5	LENGTH OF 'DCALC'
0E9B	0005		0E9C	2152	KKERK1 DC	AL2(KKELK1)	CONST FOR LENGTH OF 'DCALC'
0E9D	C4C3C1D3C3		0EA1	2153		DC	CL(KKELK1) 'DCALC'
			2154	*			'DCALC' FUNCTION
			0008	2155	KKELK2 EQU	8	LENGTH OF 'RENUMBER' COMMAND
0EA2	0008		0EA3	2156	KKERK2 DC	AL2(KKELK2)	CONST FOR LENGTH OF 'RENUMBER'
0EA4	D9C5D5E4D4C2C5D9		0EAB	2157		DC	CL(KKELK2) 'RENUMBER'
			2158	*			'RENUMBER' FUNCTION
			0004	2159	KKELK3 EQU	4	LENGTH OF 'SAVE' COMMAND
0EAC	0004		0EAD	2160	KKERK3 DC	AL2(KKELK3)	CONSTANT FOR LENGTH OF 'SAVE'
			2161	*	DC	CL(KKELK3) 'SAVE'	'SAVE' FUNCTION
			2162	*			
			000C	2163	KKELK4 EQU	12	LENGTH OF 'LINE EDITING'
0EAE	000C		0EAF	2164	KKERK4 DC	AL2(KKELK4)	CONST FOR 'LINE EDITING' LENGTH
0EB0	D3C9D5C540C5C4C9		0EBB	2165		DC	CL(KKELK4) 'LINE EDITING'
			2166	*			'LINE EDITING' FUNCTION
			0004	2167	KKELK5 EQU	4	LENGTH OF 'LIST' COMMAND
0EBC	0004		0EBD	2168	KKERK5 DC	AL2(KKELK5)	CONST FOR LENGTH OF 'LIST'
0EBE	D3C9E2E3		0EC1	2169		DC	CL(KKELK5) 'LIST'
			2170	*			'LIST' FUNCTION
			0009	2171	KKELK6 EQU	9	LENGTH OF 'CONDITION' COMMAND
0EC2	0009		0EC3	2172	KKERK6 DC	AL2(KKELK6)	CONST FOR LENGTH OF 'CONDITION'
0EC4	C3D6D5C4C9E3C9D6		0ECC	2173		DC	CL(KKELK6) 'CONDITION'
			2174	*			'CONDITION' FUNCTION
			000B	2175	KKELK7 EQU	11	LENGTH OF 'SYSTEM EDIT'
0ECD	000B		0ECE	2176	KKERK7 DC	AL2(KKELK7)	CONST FOR 'SYSTEM EDIT' LENGTH
0ECF	E2E8E2E3C5D440C5		0ED9	2177		DC	CL(KKELK7) 'SYSTEM EDIT'
			2178	*			'SYSTEM EDIT' FUNCTION
			2179	*			
			0003	2180	KKELK8 EQU	3	LENGTH OF 'RUN' COMMAND
0EDA	0003		0EDB	2181	KKERK8 DC	AL2(KKELK8)	CONST FOR 'RUN' LENGTH
0EDC	D9E4D5		0EDE	2182		DC	CL(KKELK8) 'RUN'
			2183	*			'RUN' FUNCTION
			0009	2184	KKELK9 EQU	9	LENGTH OF 'WRITE CRT'
0EDF	0009		0EE0	2185	KKERK9 DC	AL2(KKELK9)	CONST FOR 'WRITE CRT' LENGTH
0EE1	E6D9C9E3C540C3D9		0EE9	2186		DC	CL(KKELK9) 'WRITE CRT'
			2187	*			'WRITE CRT' FUNCTION
			0011	2188	KKEL10 EQU	17	LENGTH OF 'WRITE CRT,PRINTER'
0EEA	0011		0EEB	2189	KKER10 DC	AL2(KKEL10)	'WRITE CRT,PRINTER' LENGTH
0EEC	E6D9C9E3C540C3D9		0EFC	2190		DC	CL(KKEL10) 'WRITE CRT,PRINTER'
			2191	*			WRITE CRT,PRINTER' FUNC
			000D	2192	KKEL11 EQU	13	LENGTH OF 'WRITE PRINTER'
0EFD	000D		0EFE	2193	KKER11 DC	AL2(KKEL11)	'WRITE PRINTER' LENGTH
0EFF	E6D9C9E3C540D7D9		0F0B	2194		DC	CL(KKEL11) 'WRITE PRINTER'
			2195	*			WRITE PRINTER' FUNCTION
			2196	*	*****		

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE 17
					2198	*	PATCH			
					2199	*****				
					2200	*	PATCH AREA 1			*
					2201	*****				
					2202	*				
					2203	*	CALCULATE AREA LEFT IN THIS SECTOR			
					2204	*				
1000				0F0C	2205	\$\$\$\$L1	EQU *			START OF PATCH AREA 1
					2206		ORG *,256,0			SET LOC CNTR TO NEXT SECTOR
				1000	2207	\$\$\$\$T1	EQU *			DEFINE ADDR OF SCTR BNDRY
0F0C					2208		ORG \$\$\$\$L1			SET LOC CNTR TO START OF
					2209	*				* PATCH AREA
0F0C				0FFF	2210	\$\$\$\$\$1	DS CL(\$\$\$\$T1-\$\$\$\$L1)			PATCH AREA
					2211	*				
					2212	*****				
					2213	***	END OF EXPANSION ***			

#KKEYS - SET KEYWORD COMMAND ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 18
		1200	2215	KKETBL EQU	X'1200'	START OF COMMAND KEY ILL BUFFERS
			2216	*		
		1200	2217	KKECK1 EQU	X'1200'	CK1 (DCAL) COUNT FIELD
		1201	2218	KKECK2 EQU	KKECK1+1	CK2 COUNT FIELD
		1202	2219	KKECK3 EQU	KKECK2+1	CK3 COUNT FIELD
		1203	2220	KKECK4 EQU	KKECK3+1	CK4 (TAB) COUNT FIELD
		1204	2221	KKECK5 EQU	KKECK4+1	CK5 COUNT FIELD
		1205	2222	KKECK6 EQU	KKECK5+1	CK6 COUNT FIELD
		1206	2223	KKECK7 EQU	KKECK6+1	CK7 (EDIT) COUNT FIELD
		1207	2224	KKECK8 EQU	KKECK7+1	CK8 COUNT FIELD
		1208	2225	KKECK9 EQU	KKECK8+1	CK9 COUNT FIELD
		1209	2226	KKEC10 EQU	KKECK9+1	CK10 COUNT FIELD
		120A	2227	KKEC11 EQU	KKEC10+1	CK11 COUNT FIELD
		1222	2228	KKETCM EQU	KKEC11+24	BEGINNING OF COMMAND FIELDS
			2229	*		
		1222	2230	KKEKM1 EQU	KKETCM	COMMAND FOR CK1
		127C	2231	KKEKM2 EQU	KKEKM1+KKEL90	COMMAND FOR CK2
		12D6	2232	KKEKM3 EQU	KKEKM2+KKEL90	COMMAND FOR CK3
		1330	2233	KKEKM4 EQU	KKEKM3+KKEL90	COMMAND FOR CK4
		138A	2234	KKEKM5 EQU	KKEKM4+KKEL90	COMMAND FOR CK5
		13E4	2235	KKEKM6 EQU	KKEKM5+KKEL90	COMMAND FOR CK6
		143E	2236	KKEKM7 EQU	KKEKM6+KKEL90	COMMAND FOR CK7
		1498	2237	KKEKM8 EQU	KKEKM7+KKEL90	COMMAND FOR CK8
		14F2	2238	KKEKM9 EQU	KKEKM8+KKEL90	COMMAND FOR CK9
		154C	2239	KKEK10 EQU	KKEKM9+KKEL90	COMMAND FOR CK10
		15A6	2240	KKEK11 EQU	KKEK10+KKEL90	COMMAND FOR CK11
			2241	*		
		1600	2242	KKECMD EQU	X'1600'	START OF BFR FOR CHAR STRING
			2243	*		
			2244	*****		
			2245	*	\$CANI	

SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/03/22 PAGE 19
		2247+		*****	*
		2248+	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		2249+	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
		2250+	*		*
		2251+		*****	*
		2252+	*	STATUS	*
		2253+	*	VERSION 1 MODIFICATION 0	*
		2254+	*		*
		2255+	*	FUNCTION	*
		2256+	*	THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND	*
		2257+	*	RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER.	*
		2258+	*		*
		2259+	*	ENTRY POINTS	*
		2260+	*	* THE ENTRY POINT IS SCANIT.	*
		2261+	*	* THE CALLING SEQUENCE IS AS FOLLOWS:	*
		2262+	*	B SCANIT	*
		2263+	*	WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE	*
		2264+	*	EXAMINED.	*
		2265+	*		*
		2266+	*	INPUT	*
		2267+	*	NONE	*
		2268+	*		*
		2269+	*	OUTPUT	*
		2270+	*	NONE	*
		2271+	*		*
		2272+	*	EXTERNAL REFERENCES	*
		2273+	*	\$CAERR - ERROR CODE SAVE AREA	*
		2274+	*		*
		2275+	*	EXITS, NORMAL	*
		2276+	*	NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO	*
		2277+	*	SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN	*
		2278+	*	A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR	*
		2279+	*	MORE DELIMITERS WERE SCANNED.	*
		2280+	*		*
		2281+	*	EXITS, ERROR	*
		2282+	*	ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO	*
		2283+	*	SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW	*
		2284+	*	CONDITION.	*
		2285+	*		*
		2286+	*	TABLES/WORKAREAS	*
		2287+	*	* SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED	*
		2288+	*	* SCAMMA - LOC WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO	*
		2289+	*	TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA	*
		2290+	*	INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS.	*
		2291+	*		*
		2292+	*	ATTRIBUTES	*
		2293+	*	RELOCATABLE AND RE-USABLE	*
		2294+	*		*
		2295+	*	CHARACTER CODE DEPENDENCY	*
		2296+	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
		2297+	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*
		2298+	*		*
		2299+	*	NOTES	*
		2300+	*	ERROR PROCEDURES	*
		2301+	*	THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE	*
		2302+	*	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 03/03/22 PAGE 20
				2303+	*		CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE	*
				2304+	*		ERROR CODE IS SET IN \$CAERR, AND MG WILU BE POINTING TO THE	*
				2305+	*		CARRIAGE-RETURN CHARACTER.	*
				2306+	*			*
				2307+	*	REGISTER USAGE		*
				2308+	*		REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING	*
				2309+	*		SCANNED FOR DELIMITERS.	*
				2310+	*			*
				2311+	*	SAVED/RESTORED AREAS		*
				2312+	*		UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS	*
				2313+	*		THE RETURN ADDRESS.	*
				2314+	*			*
				2315+	*	MODIFICATION CONSIDERATIONS		*
				2316+	*	NONE		*
				2317+	*			*
				2318+	*	REQUIRED MODULES		*
				2319+	*	* @SYSEQ - COMMON SYSTEM EQUATES		*
				2320+	*	* @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES		*
				2321+	*			*
				2322+	*	OTHER		*
				2323+	*		SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS	*
				2324+	*		MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS.	*
				2325+	*		THE INSTRUCTION TO DO THIS IS AS FOLLOWS:	*
				2326+	*	MVI SCAMMA,SCACOM		*
				2327+	*			*
				2328+	*		TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE	*
				2329+	*		MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION:	*
				2330+	*	MVI SCAMMA,SCACOF		*
				2331+	*			*
				2332+	*	*****		*
				2334+	*			*
				2335+	*	EQUATES USED IN THIS SUBROUTINE		*
				2336+	*			*
				0001	2337+	SCAINC EQU 1	TO INCREMENT POINTER	
				0001	2338+	SCACOM EQU @BNE	SWITCH TO ALLOW SCANNING COMMA	
				0087	2339+	SCACOF EQU @UCB	SWITCH TO SET OFF THE INDICATON	
				2340+	*		* FOR SCANNING A COMMA	
				1000	2341+	SCANIT EQU *	ENTRY POINT TO THIS SUBROUTINE	
1000	34	08	103C	2342+	ST	SCA500+@OP1,@ARR	SAVE RETURN ADDRESS	
1004	34	02	103E	2343+	ST	SCASVE,@XR	SAVE POINTER VALUE	
1008	3C	04	03CD	2344+	MVI	\$CAERR,@E110	SET ERROR CODE	
100C	F2	87	03	2345+	J	SCA200	GO TO PROCESS	
100F	E2	02	01	2346+	SCA100	LA SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR	
1012	BD	40	00	2347+	SCA200	CLI 0(,@XR),@BLANK	IS THIS CHAR BLANK ?	
1015	C0	81	100F	2348+	BE	SCA100	YES, FETCH NEXT ONE	
1019	BD	6B	00	2349+	CLI	0(,@XR),@COMMA	IS IT A COMMA ?	
101C	F2	87	10	2350+	SCA250	JC SCA400,@UCB	UCS TO RETURN -- OR NOP IF	
				2351+	*		* SCAMMA IS ACTIVE AND CHAR	
101F	E2	02	01	2352+	SCA300	LA SCAINC(,@XR),@XR	INCREMENT POINTER TO NEXT CHAR	
1022	BD	40	00	2353+	CLI	0(,@XR),@BLANK	IS THIS CHAR A BLANK ?	
1025	C0	81	101F	2354+	BE	SCA300	YES, FETCH NEXT ONE	
1029	BD	1F	00	2355+	CLI	0(,@XR),@EOS+1	IS THIS EOS ?	
102C	F2	82	0A	2356+	JL	SCA500	IF NOT, SKIP ERROR ROUTINE	
102F	34	02	1040	2357+	SCA400	ST SCACNT,@XR	SAVE NEW POINTER VALUE	

SCANIT - DELIMETER SCAN MODULE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		03/03/22	PAGE	21
1033	0F 01 1040	103E		2358+	SLC	SCACNT(2),SCASVE			SET PSR TO EQUAL IF POINTER		
				2359+*					* NOT ADVANCED		
1039	C0 87 0000			2360+SCA500	B	*-*			YES, RETURN		
			101D	2361+SCAMMA	EQU	SCA250+@Q			TO SET SCAN COMMA INDICATOR		
				2362+*							
				2363+*		SAVE AREA					
				2364+*							
			103D	2365+SCASV1	EQU	*			FIRST BYTE OF SCASVE		
103D			103E	2366+SCASVE	DS	CL2			ORIGINAL POINTER VALUE SAVE		
103F			1040	2367+SCACNT	DS	CL2			SAVE AREA FOR TOTAL CHAR SCAN		
				2368+***							
				2369 *		\$C4BD			END OF SCANIT	***	

C4BIN2 - CONVERT DECIMAL TO BINARY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/03/22 PAGE 22
					2371+	*		*
					2372+		INITIALIZATION	*
					2373+			*
				1041	2374+	C4BIN2 EQU *	ENTRY POINT	
				1041	2375+	USING C4BIN2,@BR	BASE VALUE	
					2376+			
1041	34	01	10A3		2377+	ST C4B800+@OP1,@BR	SAVE CALLERS BASE REGISTER	
1045	C2	01	1041		2378+	LA C4BIN2,@BR	LOAD BASE VALUE	
					2379+			
1049	74	08	66		2380+	ST C4B850+@OP1(,@BR),@ARR	SAVE RETURN ADDRESS	
					2381+			
104C	74	02	6E		2382+	ST C4BSAV(,@BR),@XR	SAVE VALUE OF POINTER	
104F	3C	0C	03CD		2383+	MVI \$CAERR,@E122	SET ERROR CODE IN CASE	
1053	5C	01	6A 6B		2384+	MVC C4BVAL(C4BLVL,@BR),C4BINI(,@BR)	INIT VALUE TO ZERO	
1057	3C	04	10B0		2385+	C4B100 MVI C4B900,4	INITLZ CHAR. COUNT	
					2386+			
					2387+	*** DETERMINE IF CHAR NUMERIC AND DECR CHAR COUNT		
					2388+			
105B	F2	80	32		2389+	C4B200 JC C4B600,@NOP	SET TO UCB IF IMBEDDED BLANKS	
					2390+		* ALLOWED	
105E	BD	F0	00		2391+	C4B300 CLI 0(,@XR),C4BLOW	THIS CHAR NUMERIC ?	
1061	F2	82	35		2392+	JL C4B700	NO, GOTO RETURN	
					2393+			
1064	5F	00	6F 4E		2394+	SLC C4B900(1,@BR),C4B590+@D1(,@BR)	DECR CHAR COUNT	
1068	F2	82	35		2395+	JL C4B800	BR TO ERROR EXIT IF TOO MANY	
					2396+			
					2397+	*** MULTIPLY PREVIOUS VALUE BY TEN		
					2398+			
106B	5E	01	6A 6A		2399+	ALC C4BVAL(C4BLVL,@BR),C4BVAL(,@BR)	DOUBLE PREVIOUS VALUE	
106F	5C	01	68 6A		2400+	MVC C4BWRK(C4BLVL,@BR),C4BVAL(,@BR)	SAVE DOUBLE VALUE	
1073	5E	01	6A 6A		2401+	ALC C4BVAL(C4BLVL,@BR),C4BVAL(,@BR)	QUADRUPLE PREVIOUS VALUE	
1077	5E	01	6A 6A		2402+	ALC C4BVAL(C4BLVL,@BR),C4BVAL(,@BR)	OCTUPLE PREVIOUS VALUE	
107B	5E	01	6A 68		2403+	ALC C4BVAL(C4BLVL,@BR),C4BWRK(,@BR)	ADD IN SAVED DOUBLE	
					2404+			
					2405+	*** ADD IN VALUE OF THIS CHAR AND INCR POINTER		
					2406+			
107F	68	03	6C 00		2407+	MNN C4BCHR(,@BR),0(,@XR)	FETCH NEMERIC VALUE OF NEW CHAR	
1083	5E	01	6A 6C		2408+	ALC C4BVAL(C4BLVL,@BR),C4BCHR(,@BR)	INCR VALU BY THIS CHAR	
					2409+			
1087	E2	02	01		2410+	LA @B1(,@XR),@XR	INCR POINTER TO NEXT CHAR	
108A	D0	87	1A		2411+	B C4B200(,@BR)	GOTO DO IT AGAIN	
					2412+			*
					2413+		ROUTINE TO SCAN BLANKS	*
					2414+			*
108D	E2	02	01		2415+	C4B590 LA @B1(,@XR),@XR	INCR POINTER TO NEXT CHAR	
1090	BD	40	00		2416+	C4B600 CLI 0(,@XR),@BLANK	IS THIS CHAR A BLANK ?	
1093	D0	01	1D		2417+	BNE C4B300(,@BR)	RETURN IF NOT	
1096	D0	87	4C		2418+	B C4B590(,@BR)	GET NEXT CHAR IF YES	

C4BIN2 - CONVERT DECIMAL TO BINARY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE 23
					2420+*					
					2421+***	ENDING ROUTINE				
					2422+*					
1099	74	02	68		2423+C4B700	ST	C4BLEN(,@BR),@XR		PLACE VALUE OF POINTER	
109C	5F	01	68 6E		2424+	SLC	C4BLEN(2,@BR),C4BSAV(,@BR)		SUBTRACT ENTERING VALUE	
					2425+*					
10A0	C2	01	0000		2426+C4B800	LA	*-*,@BR		RESTORE CALLERS BR	
					2427+*					
10A4	C0	87	0000		2428+C4B850	B	*-*		RETURN TO CALLING ROUTINE	
					2429+*				*	
					2430+*		WORK AREA AND CONSTANT		*	
					2431+*				*	
10A8				10A9	2432+C4BWRK	DS	CL2		SAVE AREA FOR DOUBLED VALUE	
					2433+*					
				10AA	2434+C4BYT1	EQU	*		FIRST BYTE OF BINARY VALUE	
10AA				10AB	2435+C4BVAL	DS	CL2		SAVE AREA FOR BINARY VALUE	
					2436+*					
10AC	00			10AC	2437+C4BINI	DC	XL1'00'		INITIALIZE WA TO ZERO	
					2438+*					
10AD				10AD	2439+C4BCHR	DS	CL1		SAVE AREA FOR EACH NEW CHAR	
10AD					2440+	ORG	*-1		INITIALIZE	
10AD	00			10AD	2441+	DC	XL1'00'		* TO ZERO	
					2442+*					
10AE				10AF	2443+C4BSAV	DS	CL2		SAVE AREA FOR XR	
					2444+*					
10B0				10B0	2445+C4B900	DS	CL1		SAVE AREA FOR CHAR COUNTER	
					2446+*				*	
					2447+*		EQUATES FOR C4BIN2		*	
					2448+*				*	
				10A9	2449+C4BLEN	EQU	C4BWRK		ON RETURN WILL CONTAIN COUNT	
					2450+*				* @XR INCREMENTED BY	
				0004	2451+C4BCHC	EQU	4		NUMBER OF CHAR TO CONVERT	
					2452+*					
				00F0	2453+C4BLOW	EQU	C'0'		LOWEST NUMERIC CHARACTER	
					2454+*					
				0002	2455+C4BLVL	EQU	C4BVAL-C4BWRK		LENGTH OF BINARY VALUE	
					2456+*					
				105C	2457+C4BLNK	EQU	C4B200+@Q		LOCATION OF IMBEDDED BLANK IND	
					2458+*					
				0087	2459+C4BSPC	EQU	@UCB		MOVED TO C4BLNK TO ALLOW BLANKS	
					2460+*					
				1058	2461+C4BNMC	EQU	C4B100+@Q		LOCATION OF CONVERSION COUNT	
					2462+*					
				0080	2463+C4BNOP	EQU	@NOP		CHANGED IF IMBEDDED BLANK OK	
				10B1	2464+C4END	EQU	*		DEFINE END OF CODE	
					2465+***			END OF C4BIN2	***	
					2466 *	\$CSTR				

SCSTRG - PLACES SYNTACTIC UNIT <CHAR STRING>

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/03/22 PAGE 24
			2468+		*****	*
			2469+	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
			2470+	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
			2471+	*		*
			2472+		*****	*
			2473+	*	STATUS	*
			2474+	*	VERSION 1 MODIFICATION 0	*
			2475+	*		*
			2476+	*	FUNCTION	*
			2477+	*	* SCSTRG PLACES THE SYNTACTIC UNIT <CHARACTER STRING> IN	*
			2478+	*	AN AREA DEFINED BY THE USER. THIS ROUTINE WILL ALSO PLACE A	*
			2479+	*	NUMBER OF CHARACTERS IN THE CALLING PROGRAMS AREA.	*
			2480+	*	* A COUNT OF THE NUMBER OF CHARACTERS IN THE STRING IS MAINTAINED	*
			2481+	*	BY SCSTRG.	*
			2482+	*		*
			2483+	*	ENTRY POINTS	*
			2484+	*	THE ONLY ENTRY TO SCSTRG IS THE FIRST BYTE OF	*
			2485+	*	THE ROUTINE. THE CALLING SEQUENCE IS:	*
			2486+	*	B SCSTRG	*
			2487+	*	DC AL2(AREA)	*
			2488+	*		*
			2489+	*	WHERE AREA POINTS TO THE LEFTMOST BYTE OF THE CALLING	*
			2490+	*	PROGRAMS OUTPUT AREA.	*
			2491+	*		*
			2492+	*	INPUT	*
			2493+	*	INDEX REGISTER TWO(2) SHOULD POINT TO THE LEFT QUOTE OF THE	*
			2494+	*	CHARACTER STRING. THE CALLING PROGRAM MUST ALSO SET THE	*
			2495+	*	CHARACTER COUNT IN THE ONE BYTE FIELD SCSLNG. A ZERO(0) LENGTH	*
			2496+	*	DENOTES THAT THE CALLING PROGRAM WANTS THE ENTIRE STRING.	*
			2497+	*		*
			2498+	*	OUTPUT	*
			2499+	*	THE CHARACTER STRING IS RETURNED TO THE ADDRESS GIVEN BY THE	*
			2500+	*	CALLING ROUTINE. THE FIELD SCSCNT CONTAINS THE NUMBER OF	*
			2501+	*	CHARACTERS IN THE CHARACTER STRING.	*
			2502+	*		*
			2503+	*	EXTERNAL REFERENCES	*
			2504+	*	NONE	*
			2505+	*		*
			2506+	*	EXITS, NORMAL	*
			2507+	*	NORMAL EXIT IS TO THE FIRST BYTE FOLLOWING THE THE	*
			2508+	*	POINTER TO THE USERS STRING AREA. THE BASE REGISTER	*
			2509+	*	IS RESTORED(XR1). XR2 WILL POINT TO THE CHARACTER	*
			2510+	*	FOLLOWING THE ENDING QUOTE. THE PSR WILL BE NOT LOW.	*
			2511+	*		*
			2512+	*	EXITS, ERROR	*
			2513+	*	SHOULD AN ERROR BE FOUND THE PSR IS FORCED LOW. THE XR2	*
			2514+	*	WILL POINT TO THE POSITION WHERE THE ERROR WAS FOUND.	*
			2515+	*		*
			2516+	*	TABLES/WORKAREAS	*
			2517+	*	NONE	*
			2518+	*		*
			2519+	*	ATTRIBUTES	*
			2520+	*	SCSTRG IS REUSABLE	*
			2521+	*		*
			2522+	*	CHARACTER CODE DEPENDENCY	*
			2523+	*	THIS ROUTINE ASSUMES THE EBCDIC CODE OF X'7D' FOR A	*

SCSTRG - PLACES SYNTACTIC UNIT <CHAR STRING>

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE 25
					2524+*		SINGLE QUOTE.			*
					2525+*					*
					2526+*		NOTES			*
					2527+*		ERROR PROCEDURES			*
					2528+*		N/A			*
					2529+*					*
					2530+*		REGISTER USAGE			*
					2531+*		INDEX REGISTER 1 IS USED AS A POINTER TO THE CALLING PROGRAMS			*
					2532+*		STRING AREA. INDEX REGISTER 2 POINTS TO THE CHARACTER STRING			*
					2533+*		IN THE INPUT LINE. XR 1 IS SAVED AND RESTORED.			*
					2534+*					*
					2535+*		REQUIRED MODULES			*
					2536+*		@SYSEQ - SYSTEM EQUATES			*
					2537+*					*
					2538+*		MODIFICATION CONSIDERATIONS			*
					2539+*		NONE			*
					2540+*					*
					2541+*		OTHER			*
					2542+*		NONE			*
					2543+*		*****			*
				10B1	2545+SCSTRG	EQU	*			ENTRY POINT
10B1	34	01	1121		2546+	ST	SCS050+@OP1,@BR			SAVE BASE REGISTER
10B5	34	08	1125		2547+	ST	SCS051+@OP1,@ARR			SAVE RETURN ADDRESS
10B9	0E	00	1125	1129	2548+	ALC	SCS051+@OP1(@B1),SCSPL2			INCREMENT PAST PARAMETER
10BF	36	08	1128		2549+	A	SCSPL1,@ARR			POINT TO PARAMETER
10C3	34	08	10D2		2550+	ST	SCS005+@OP1,@ARR			SAVE PARAMETER ADDRESS
10C7	3C	00	1126		2551+	MVI	SCSCNT,@ZERO			CLEAR COUNTER
10CB	3C	80	10F8		2552+	MVI	SCS020+@Q,@NOP			SET SWITCH OFF
10CF	35	01	0000		2553+SCS005	L	*-*,@BR			PICK UP OUTPUT ADDRESS
10D3	BD	7D	00		2554+	CLI	@ZERO(,@XR),SCSQUO			CHECK QUOTES
10D6	F2	01	37		2555+	JNE	SCS030			ERROR -
					2556+*					
10D9	E2	02	01		2557+SCS006	LA	@B1(,@XR),@XR			INCREMENT POINTER
10DC	BD	7D	00		2558+	CLI	@ZERO(,@XR),SCSQUO			EMBEDDED QUOTES
10DF	F2	01	09		2559+	JNE	SCS010			NO GO CHECK FOR EOS
10E2	E2	02	01		2560+	LA	@B1(,@XR),@XR			MOVE INPUT POINTER
10E5	BD	7D	00		2561+	CLI	@ZERO(,@XR),SCSQUO			DOUBLE QUOTE ?
10E8	F2	01	30		2562+	JNE	SCS040			EXIT
10EB	BD	1E	00		2563+SCS010	CLI	@ZERO(,@XR),@EOS			END OF STATEMENT ?
10EE	F2	81	1F		2564+	JE	SCS030			YES - ERROR
10F1	0E	00	1126	1128	2565+	ALC	SCSCNT(@B1),SCSPL1			INCREMENT COUNT
					2566+*					
10F7	F2	00	12		2567+SCS020	JC	SCS029,*-*			SWITCH
10FA	6C	00	00	00	2568+	MVC	@ZERO(@B1,@BR),@ZERO(,@XR)			MOVE CHARACTER
10FE	D2	01	01		2569+	LA	@B1(,@BR),@BR			BUMP OUTPUT POINTER
					2570+*					
1101	3D	00	1126		2571+SCS025	CLI	SCSCNT,*-*			CHECK CHARACTER COUNT
1105	F2	01	04		2572+	JNE	SCS029			NOT EXCEEDED CONTINUE
1108	3C	87	10F8		2573+	MVI	SCS020+@Q,@UCB			SET SWITCH ON
110C	C0	87	10D9		2574+SCS029	B	SCS006			RETURN TO MAINLINE

SCSTRG - PLACES SYNTACTIC UNIT <CHAR STRING>

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/03/22	PAGE	26
					2576+*						
					2577+*		ERROR SETTING				
					2578+*						
				1110	2579+SCS030	EQU	*				
1110	35	04	112B		2580+	L	SCSERR,@PSR			SET ERROR INDICATOR	
1114	3C	17	03CD		2581+	MVI	\$CAERR,@E138			INCOMPLETE CHARACTER CONSTANT	
1118	F2	87	03		2582+	J	SCS050			RETURN	
111B	BD	FF	00		2583+SCS040	CLI	0(,@XR),SCSFRC			FORCE PSR LOW	
					2584+*						
					2585+*		RETURN				
					2586+*						
111E	C2	01	0000		2587+SCS050	LA	*-*,@BR			RESTORE BASE	
1122	C0	87	0000		2588+SCS051	B	*-*			RETURN	
					2589+*						
					2590+*		CONSTANTS				
					2591+*						
				1102	2592+SCSLNG	EQU	SCS025+@Q			LENGTH REQUESTED	
				007D	2593+SCSQUO	EQU	X'7D'			QUOTE	
				00FF	2594+SCSFRC	EQU	X'FF'			FORCE PSR INDICATOR	
					2595+*						
1126				1126	2596+SCSCNT	DS	CL1			CHARACTER COUNT	
1127	0001			1128	2597+SCSPL1	DC	IL2'1'			PLUS ONE	
1129	02			1129	2598+SCSPL2	DC	IL1'2'			PLUS TWO	
112A	0084			112B	2599+SCSERR	DC	XL2'84'			PSR CODE FOR ERROR	
					2600+***		END OF SCSTRG			***	
					2601 *						
				FFFF	2602	END					

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

[illegible]

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 28

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$DTRDR	001	0040	0358	
\$ENDNU	001	0600	0617	
\$ERDPL	001	046F	0542	0544
\$ERFIL	001	0040	0297	
\$ERHRD	001	0004	0429	
\$ERKEY	001	0080	0301	
\$ERLOG	001	0345	0231	
\$ERMAD	001	0472	0544	0545
\$ERPND	001	0004	0402	
\$ERRCT	001	03CF	0303	
\$ERRPG	001	03CE	0291	
\$ERSFL	001	0035	0296	
\$ERSTK	001	0030	0294	
\$ER050	001	0363	0232	
\$ER1N2	001	0050	0299	
\$EXADR	001	0517	0577	0579
\$EXCMD	001	0001	0331	
\$EXFTR	001	043B	0513	0518
\$FCIND	001	0010	0409	
\$FDIND	001	0040	0416	
\$FEARR	001	0004	0224	
\$FEMAP	001	0588	0610	0611
\$FILIB	001	03DA	0460	0461
\$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	
\$KKEYS	001	0C07	1812	
\$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 1818 2072
\$LPRIO	001	03EA	0496	
\$LPROS	001	03E5	0491	0493

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 29

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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	
\$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
\$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 1879 1899 1909
\$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 1902
\$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 1910
\$WFDEF	001	0040	0519	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 30

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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	
\$XRSAV	001	03C7	0282	0284 1816 1821
\$ZTRAD	001	05A2	0611	
\$12K	001	0004	0466	
\$16CKY	001	0008	0468	1823
\$16K	001	0002	0465	
\$22IMP	001	0001	0463	
###BL	001	0000	1569	
###CK	001	0000	1697	
###CN	001	0000	1665	
###CO	001	0000	1457	
###CS	001	0000	1517	
###DR	001	0000	1261	
###ER	001	0000	1461	
###FS	001	0000	1557	
###IN	001	0000	1701	
###PW	001	0000	1705	
###RS	001	0000	1537	
###SA	001	0000	1525	
###SS	001	0000	1521	
###VU	001	0600	1481	
###0T	001	0700	1253	
###1T	001	0000	1257	
###BCO	001	0600	1269	
###BOV	001	0800	1541	
###DPR	001	0700	1277	
###DRE	001	0889	1293	
###DSP	001	2800	1313	
###ECM	001	0C00	1573	
###EFK	001	0C00	1593	
###ERR	001	0C00	1565	
###EXM	001	0C00	1453	
###FIL	001	0E00	1533	
###FIS	001	0E00	1529	
###FML	001	0200	1661	
###FMS	001	0200	1501	
###GRA	001	0889	1425	
###GUF	001	0C00	1561	
###INL	001	0600	1641	
###INS	001	0600	1265	
###KAL	001	0C00	1429	
###KCA	001	0C00	1645	
###KCH	001	0C00	1397	
###KCN	001	0C00	1513	
###KCT	001	0C00	1365	
###KDE	001	0C00	1361	
###KDI	001	0D00	1441	
###KDN	001	0C00	1349	
###KDO	001	0E00	1445	
###KED	001	0C00	1285	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 31

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$KEN	001	0C00	1289	
\$\$\$KEX	001	0C00	1309	
\$\$\$KGO	001	0C00	1281	
\$\$\$KHE	001	0C00	1465	
\$\$\$KKE	001	0C00	1693	1808
\$\$\$KLI	001	0C00	1369	
\$\$\$KLL	001	0920	1669	
\$\$\$KLO	001	0C00	1373	
\$\$\$KME	001	0D00	1353	
\$\$\$KMO	001	0C00	1297	
\$\$\$KNA	001	0C00	1409	
\$\$\$KOV	001	0E00	1329	
\$\$\$KPA	001	0C00	1305	
\$\$\$KPO	001	0C00	1393	
\$\$\$KPR	001	0C00	1417	
\$\$\$KRE	001	0C00	1337	
\$\$\$KRL	001	0700	1433	
\$\$\$KRM	001	0C00	1301	
\$\$\$KRN	001	0700	1321	
\$\$\$KRO	001	0D00	1325	
\$\$\$KRS	001	0C00	1649	
\$\$\$KRU	001	0C00	1345	
\$\$\$KRV	001	0800	1437	
\$\$\$KSA	001	0C00	1381	
\$\$\$KSE	001	0E00	1421	
\$\$\$KSO	001	0C20	1473	
\$\$\$KSS	001	0C00	1405	
\$\$\$KSV	001	0980	1401	
\$\$\$KSY	001	0C00	1413	
\$\$\$KWI	001	0C00	1341	
\$\$\$KWR	001	0C00	1333	
\$\$\$LOA	001	0600	1273	
\$\$\$MIP	001	0C00	1469	
\$\$\$SDS	001	0C00	1581	
\$\$\$SFF	001	0E00	1585	
\$\$\$SFL	001	0F00	1577	
\$\$\$SFO	001	1500	1549	
\$\$\$SFS	001	0C00	1545	
\$\$\$SPA	001	0C00	1385	
\$\$\$SPO	001	0806	1389	
\$\$\$SPS	001	0C00	1377	
\$\$\$STR	001	1600	1553	
\$\$\$TDC	001	1000	1357	
\$\$\$TSY	001	1000	1317	
\$\$\$TVK	001	0FC0	1493	
\$\$\$UAL	001	0C00	1509	
\$\$\$UAT	001	0900	1605	
\$\$\$UCD	001	0900	1613	
\$\$\$UCN	001	0C00	1597	
\$\$\$UCP	001	0700	1601	
\$\$\$UDE	001	0C00	1617	
\$\$\$UDI	001	0C00	1621	
\$\$\$UEX	001	0C00	1505	
\$\$\$UIN	001	0C00	1609	
\$\$\$UPA	001	0C00	1589	
\$\$\$UPO	001	0C00	1657	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 32

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$UPT	001	0C00	1653	
\$\$\$VCR	001	2000	1449	
\$\$\$VLO	001	0600	1485	
\$\$\$VOD	001	0600	1489	
\$\$\$VVM	001	0000	1497	
\$\$\$VXI	001	0600	1477	
\$\$\$ZDU	001	1100	1629	
\$\$\$ZLB	001	1100	1673	
\$\$\$ZLO	001	1100	1633	
\$\$\$ZLV	001	0F00	1689	
\$\$\$ZL1	001	0F00	1677	
\$\$\$ZL2	001	0F00	1681	
\$\$\$ZL3	001	0C00	1685	
\$\$\$ZTR	001	1000	1625	
\$\$\$ZUT	001	0C00	1637	
##BLN	001	18D4	1568	
##CKT	001	2118	1696	2104
##CNF	001	2000	1664	
##COR	001	0800	1456	
##CSA	001	1000	1516	
##DRT	001	0000	1260	
##ERM	001	0928	1460	
##FSP	001	1880	1556	
##INV	001	212C	1700	
##PWR	001	2300	1704	
##RSP	001	1780	1536	
##SAV	001	1180	1524	
##SSA	001	1128	1520	
##VUF	001	0B08	1480	
##0TR	001	0000	1252	
##1TR	001	0080	1256	
##@BL	001	0001	1570	
##@CK	001	0004	1698	2105
##@CN	001	0001	1666	
##@CO	001	003A	1458	
##@CS	001	003A	1518	
##@DR	001	0008	1262	
##@ER	001	0032	1462	
##@FS	001	0030	1558	
##@IN	001	003A	1702	
##@PW	001	00C0	1706	
##@RS	001	0030	1538	
##@SA	001	0108	1526	
##@SS	001	0001	1522	
##@VU	001	0002	1482	
##@0T	001	0018	1254	
##@1T	001	0018	1258	
##@BCO	001	0018	1270	
##@BOV	001	0018	1542	
##@DPR	001	0005	1278	
##@DRE	001	0001	1294	
##@DSP	001	0004	1314	
##@ECM	001	0006	1574	
##@EFK	001	0002	1594	
##@ERR	001	0003	1566	
##@EXM	001	0003	1454	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 33

SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$@FIL	001	0009	1534	
#\$@FIS	001	0009	1530	
#\$@FML	001	0052	1662	
#\$@FMS	001	0052	1502	
#\$@GRA	001	0003	1426	
#\$@GUF	001	0010	1562	
#\$@INL	001	0010	1642	
#\$@INS	001	0010	1266	
#\$@KAL	001	000F	1430	
#\$@KCA	001	000C	1646	
#\$@KCH	001	000C	1398	
#\$@KCN	001	0010	1514	
#\$@KCT	001	0009	1366	
#\$@KDE	001	0010	1362	
#\$@KDI	001	0005	1442	
#\$@KDN	001	0010	1350	
#\$@KDO	001	000C	1446	
#\$@KED	001	000E	1286	
#\$@KEN	001	0006	1290	
#\$@KEX	001	0003	1310	
#\$@KGO	001	0002	1282	
#\$@KHE	001	000C	1466	
#\$@KKE	001	0006	1694	
#\$@KLI	001	0011	1370	
#\$@KLL	001	0001	1670	
#\$@KLO	001	0008	1374	
#\$@KME	001	0003	1354	
#\$@KMO	001	0004	1298	
#\$@KNA	001	0008	1410	
#\$@KOV	001	0009	1330	
#\$@KPA	001	0005	1306	
#\$@KPO	001	000D	1394	
#\$@KPR	001	0009	1418	
#\$@KRE	001	0002	1338	
#\$@KRL	001	0004	1434	
#\$@KRM	001	0003	1302	
#\$@KRN	001	0003	1322	
#\$@KRO	001	000A	1326	
#\$@KRS	001	000A	1650	
#\$@KRU	001	0003	1346	
#\$@KRV	001	000D	1438	
#\$@KSA	001	0011	1382	
#\$@KSE	001	0004	1422	
#\$@KSO	001	0005	1474	
#\$@KSS	001	000B	1406	
#\$@KSV	001	0002	1402	
#\$@KSY	001	000F	1414	
#\$@KWI	001	0002	1342	
#\$@KWR	001	0002	1334	
#\$@LOA	001	0013	1274	
#\$@MIP	001	000D	1470	
#\$@SDS	001	0004	1582	
#\$@SFF	001	0008	1586	
#\$@SFL	001	0005	1578	
#\$@SFO	001	0003	1550	
#\$@SFS	001	0011	1546	

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 03/03/22 PAGE 34

#\$@SPA	001	0004	1386	
#\$@SPO	001	0003	1390	
#\$@SPS	001	0001	1378	
#\$@STR	001	0002	1554	
#\$@TDC	001	0003	1358	
#\$@TSY	001	0003	1318	
#\$@TVK	001	0001	1494	
#\$@UAL	001	0011	1510	
#\$@UAT	001	000C	1606	
#\$@UCD	001	000B	1614	
#\$@UCN	001	0009	1598	
#\$@UCP	001	000F	1602	
#\$@UDE	001	000E	1618	
#\$@UDI	001	0008	1622	
#\$@UEX	001	000E	1506	
#\$@UIN	001	000F	1610	
#\$@UPA	001	0004	1590	
#\$@UPO	001	0005	1658	
#\$@UPT	001	0012	1654	
#\$@VCR	001	0008	1450	
#\$@VLO	001	0002	1486	
#\$@VOD	001	0016	1490	
#\$@VVM	001	0030	1498	
#\$@VXI	001	0002	1478	
#\$@ZDU	001	0008	1630	
#\$@ZLB	001	0002	1674	
#\$@ZLO	001	000C	1634	
#\$@ZLV	001	0006	1690	
#\$@ZL1	001	0007	1678	
#\$@ZL2	001	000D	1682	
#\$@ZL3	001	000A	1686	
#\$@ZTR	001	0001	1626	
#\$@ZUT	001	0014	1638	
#\$BCOM	001	0080	1268	
#\$BOLV	001	1780	1540	
#\$DPRI	001	014C	1276	
#\$DREA	001	0200	1292	
#\$DSPL	001	0240	1312	
#\$ECMA	001	1900	1572	
#\$EFKE	001	1990	1592	
#\$ERRP	001	18C0	1564	
#\$EXMS	001	07D4	1452	
#\$FILN	001	1724	1532	
#\$FIST	001	1700	1528	
#\$FMLN	001	1E00	1660	
#\$FMST	001	0D00	1500	
#\$GRAP	001	0690	1424	
#\$GUFU	001	1880	1560	
#\$INLN	001	1C84	1640	
#\$INST	001	0020	1264	
#\$KALL	001	06A4	1428	
#\$KCAL	001	1CC4	1644	
#\$KCHA	001	053C	1396	
#\$KCND	001	0F80	1512	
#\$KCTL	001	03BC	1364	
#\$KDEL	001	035C	1360	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 35

SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$KDIS	001	0744	1440	
#\$KDNT	001	0300	1348	
#\$KDOV	001	0780	1444	
#\$KEDI	001	0188	1284	
#\$KENA	001	01C4	1288	
#\$KEXT	001	0234	1308	
#\$KGOS	001	0180	1280	
#\$KHEL	001	0A30	1464	
#\$KKEY	001	2100	1692	
#\$KLIS	001	0400	1368	
#\$KLLA	001	2004	1668	
#\$KLOG	001	0444	1372	
#\$KMER	001	030C	1352	
#\$KMOU	001	0204	1296	
#\$KNAM	001	05C0	1408	
#\$KOVN	001	0290	1328	
#\$KPAS	001	0220	1304	
#\$KPOO	001	0508	1392	
#\$KPRT	001	063C	1416	
#\$KREA	001	02BC	1336	
#\$KRLA	001	0700	1432	
#\$KRMO	001	0214	1300	
#\$KRNU	001	0280	1320	
#\$KROV	001	028C	1324	
#\$KRSU	001	1D24	1648	
#\$KRUN	001	02CC	1344	
#\$KRVL	001	0710	1436	
#\$KSAV	001	0488	1380	
#\$KSET	001	0680	1420	
#\$KSOV	001	0AC8	1472	
#\$KSSP	001	0594	1404	
#\$KSVL	001	058C	1400	
#\$KSYM	001	0600	1412	
#\$KWID	001	02C4	1340	
#\$KWRI	001	02B4	1332	
#\$LOAD	001	0100	1272	
#\$MIPP	001	0A80	1468	
#\$SDSY	001	192C	1580	
#\$SFFI	001	193C	1584	
#\$SFLO	001	1918	1576	
#\$SFOV	001	1844	1548	
#\$SFSY	001	1800	1544	
#\$SPAC	001	04CC	1384	
#\$SPOV	001	04DC	1388	
#\$SPSY	001	0484	1376	
#\$STRO	001	1850	1552	
#\$TDCK	001	0350	1356	
#\$TSYK	001	0250	1316	
#\$TVKB	001	0BAC	1492	
#\$UALL	001	0F00	1508	
#\$UATR	001	1A38	1604	
#\$UCDI	001	1AD8	1612	
#\$UCNF	001	19B8	1596	
#\$UCPL	001	19DC	1600	
#\$UDEL	001	1B24	1616	
#\$UDIS	001	1B5C	1620	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 36

SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$UEXL	001	0EA8	1504	
#\$UINI	001	1A88	1608	
#\$UPAC	001	1980	1588	
#\$UPOV	001	1D24	1656	
#\$UPTF	001	1D5C	1652	
#\$VCRT	001	07B4	1448	
#\$VLOA	001	0B80	1484	
#\$VODK	001	0B88	1488	
#\$VVMR	001	0C00	1496	
#\$VXIT	001	0B00	1476	
#\$ZDUM	001	1BA4	1628	
#\$ZLBM	001	2008	1672	
#\$ZLOA	001	1BC4	1632	
#\$ZLVR	001	20B0	1688	
#\$ZL1M	001	2010	1676	
#\$ZL2M	001	2030	1680	
#\$ZL3M	001	2088	1684	
#\$ZTRA	001	1B9C	1624	
#\$ZUTM	001	1C14	1636	
#KKEYS	001	0000	0001	
@@E001	001	0000	1156	1158
@@E003	001	0001	1158	1160
@@E004	001	0002	1160	1162
@@E005	001	0003	1162	1164
@@E006	001	0004	1164	1166
@@E007	001	0005	1166	1168
@@E008	001	0006	1168	1170
@@E009	001	0007	1170	1172
@@E010	001	0008	1172	1174
@@E011	001	0009	1174	1176
@@E012	001	000A	1176	1178
@@E013	001	000B	1178	1180
@@E014	001	000C	1180	1182
@@E015	001	000D	1182	1184
@@E016	001	000E	1184	1186
@@E017	001	000F	1186	1188
@@E018	001	0010	1188	1190
@@E019	001	0011	1190	1192
@@E020	001	0012	1192	1194
@@E021	001	0013	1194	1196
@@E023	001	0014	1196	1198
@@E024	001	0015	1198	1200
@@E025	001	0016	1200	1202
@@E026	001	0017	1202	1204
@@E027	001	0018	1204	1206
@@E028	001	0019	1206	1208
@@E029	001	001A	1208	1210
@@E030	001	001B	1210	1212
@@E031	001	001C	1212	1214
@@E032	001	001D	1214	1216
@@E035	001	001E	1216	1218
@@E036	001	001F	1218	1220
@@E037	001	0020	1220	1222
@@E038	001	0021	1222	1224
@@E039	001	0022	1224	1226
@@E040	001	0023	1226	1228

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 03/03/22 PAGE 37

@@E041	001	0024	1228	1230	
@@E042	001	0025	1230	1232	
@@E043	001	0026	1232	1234	
@@E044	001	0027	1234	1236	
@@E045	001	0028	1236	1238	
@@E046	001	0029	1238	1240	
@@E060	001	002A	1240	1242	
@@E080	001	002B	1242		
@@E100	001	0000	0628	0630	
@@E101	001	0001	0630	0632	
@@E102	001	0002	0632	0634	
@@E103	001	0003	0634	0636	
@@E110	001	0004	0636	0638	2344
@@E112	001	0005	0638	0640	
@@E113	001	0006	0640	0642	
@@E114	001	0007	0642	0644	
@@E115	001	0008	0644	0646	
@@E116	001	0009	0646	0648	
@@E117	001	000A	0648	0650	
@@E120	001	000B	0650	0652	
@@E122	001	000C	0652	0654	2383
@@E123	001	000D	0654	0656	
@@E124	001	000E	0656	0658	
@@E129	001	000F	0658	0660	
@@E130	001	0010	0660	0662	
@@E131	001	0011	0662	0664	1843 1862 1971
@@E133	001	0012	0664	0666	1854 1976
@@E134	001	0013	0666	0668	
@@E135	001	0014	0668	0670	
@@E136	001	0015	0670	0672	
@@E137	001	0016	0672	0674	
@@E138	001	0017	0674	0676	2581
@@E139	001	0018	0676	0678	1827
@@E142	001	0019	0678	0680	
@@E143	001	001A	0680	0682	
@@E150	001	001B	0682	0684	
@@E151	001	001C	0684	0686	
@@E160	001	001D	0686	0688	
@@E162	001	001E	0688	0690	
@@E163	001	001F	0690	0692	
@@E164	001	0020	0692	0694	
@@E200	001	0021	0694	0696	
@@E205	001	0022	0696	0698	
@@E210	001	0023	0698	0700	
@@E211	001	0024	0700	0702	
@@E212	001	0025	0702	0704	
@@E213	001	0026	0704	0706	
@@E215	001	0027	0706	0708	
@@E216	001	0028	0708	0710	
@@E217	001	0029	0710	0712	
@@E220	001	002A	0712	0714	
@@E221	001	002B	0714	0716	
@@E222	001	002C	0716	0718	
@@E223	001	002D	0718	0720	
@@E225	001	002E	0720	0722	
@@E226	001	002F	0722	0724	

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 38

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E227	001	0030	0724	0726
@@E228	001	0031	0726	0728
@@E229	001	0032	0728	0730
@@E230	001	0033	0730	0732
@@E232	001	0034	0732	0734
@@E234	001	0035	0734	0736
@@E237	001	0036	0736	0738
@@E240	001	0037	0738	0740
@@E241	001	0038	0740	0742
@@E242	001	0039	0742	0744
@@E248	001	003A	0744	0746
@@E249	001	003B	0746	0748
@@E250	001	003C	0748	0750
@@E251	001	003D	0750	0752
@@E252	001	003E	0752	0754
@@E253	001	003F	0754	0756
@@E254	001	0040	0756	0758
@@E255	001	0041	0758	0760
@@E256	001	0042	0760	0762
@@E300	001	0043	0762	0764
@@E301	001	0044	0764	0766
@@E302	001	0045	0766	0768
@@E303	001	0046	0768	0770
@@E304	001	0047	0770	0772
@@E305	001	0048	0772	0774
@@E308	001	0049	0774	0776
@@E310	001	004A	0776	0778
@@E315	001	004B	0778	0780
@@E316	001	004C	0780	0782
@@E320	001	004D	0782	0784
@@E325	001	004E	0784	0786
@@E330	001	004F	0786	0788
@@E335	001	0050	0788	0790
@@E338	001	0051	0790	0792
@@E340	001	0052	0792	0794
@@E350	001	0053	0794	0796
@@E351	001	0054	0796	0798
@@E352	001	0055	0798	0800
@@E360	001	0056	0800	0802
@@E361	001	0057	0802	0804
@@E362	001	0058	0804	0806
@@E371	001	0059	0806	0808
@@E380	001	005A	0808	0810
@@E390	001	005B	0810	0812
@@E400	001	005C	0812	0814
@@E410	001	005D	0814	0816
@@E415	001	005E	0816	0818 1932
@@E417	001	005F	0818	0820 1990
@@E420	001	0060	0820	0822
@@E430	001	0061	0822	0824
@@E432	001	0062	0824	0826
@@E433	001	0063	0826	0828
@@E450	001	0064	0828	0830
@@E451	001	0065	0830	0832
@@E460	001	0066	0832	0834
@@E461	001	0067	0834	0836

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 39

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E464	001	0068	0836	0838
@@E465	001	0069	0838	0840
@@E466	001	006A	0840	0842
@@E467	001	006B	0842	0844
@@E469	001	006C	0844	0846
@@E470	001	006D	0846	0848
@@E471	001	006E	0848	0850
@@E473	001	006F	0850	0852
@@E474	001	0070	0852	0854
@@E475	001	0071	0854	0856
@@E476	001	0072	0856	0858
@@E477	001	0073	0858	0860
@@E478	001	0074	0860	0862
@@E479	001	0075	0862	0864
@@E480	001	0076	0864	0866
@@E481	001	0077	0866	0868
@@E482	001	0078	0868	0870
@@E483	001	0079	0870	0872
@@E484	001	007A	0872	0874
@@E485	001	007B	0874	0876
@@E486	001	007C	0876	0878
@@E487	001	007D	0878	0880
@@E488	001	007E	0880	0882
@@E489	001	007F	0882	0884
@@E490	001	0080	0884	0886
@@E491	001	0081	0886	0888
@@E492	001	0082	0888	0890
@@E493	001	0083	0890	0892
@@E494	001	0084	0892	0894
@@E495	001	0085	0894	0896
@@E496	001	0086	0896	0898
@@E497	001	0087	0898	0900
@@E498	001	0088	0900	0902
@@E500	001	0089	0902	0904
@@E501	001	008A	0904	0906
@@E530	001	008B	0906	0908
@@E531	001	008C	0908	0910
@@E535	001	008D	0910	0912
@@E540	001	008E	0912	0914
@@E541	001	008F	0914	0916
@@E542	001	0090	0916	0918
@@E543	001	0091	0918	0920
@@E544	001	0092	0920	0922
@@E545	001	0093	0922	0924
@@E546	001	0094	0924	0926
@@E547	001	0095	0926	0928
@@E548	001	FFFF	1132	
@@E549	001	0096	0928	0930
@@E550	001	0097	0930	0932
@@E551	001	0098	0932	0934
@@E552	001	0099	0934	0936
@@E553	001	009A	0936	0938
@@E554	001	009B	0938	0940
@@E555	001	009C	0940	0942
@@E556	001	009D	0942	0944
@@E558	001	009E	0944	0946

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 40

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E570	001	009F	0946	0948
@@E571	001	00A0	0948	0950
@@E572	001	00A1	0950	0952
@@E573	001	00A2	0952	0954
@@E574	001	00A3	0954	0956
@@E575	001	FFFF	1134	
@@E578	001	00A4	0956	0958
@@E579	001	FFFF	1136	
@@E580	001	FFFF	1138	
@@E585	001	00A5	0958	0960
@@E595	001	FFFF	1140	
@@E597	001	FFFF	1142	
@@E598	001	FFFF	1144	
@@E600	001	00A6	0960	0962
@@E601	001	00A7	0962	0964
@@E602	001	00A8	0964	0966
@@E603	001	00A9	0966	0968
@@E604	001	00AA	0968	0970
@@E606	001	00AB	0970	0972
@@E607	001	00AC	0972	0974
@@E608	001	00AD	0974	0976
@@E609	001	00AE	0976	0978
@@E610	001	00AF	0978	0980
@@E611	001	00B0	0980	0982
@@E612	001	00B1	0982	0984
@@E613	001	00B2	0984	0986
@@E614	001	00B3	0986	0988
@@E700	001	00B4	0988	0990
@@E701	001	00B5	0990	0992
@@E710	001	00B6	0992	0994
@@E712	001	00B7	0994	0996
@@E713	001	00B8	0996	0998
@@E714	001	00B9	0998	1000
@@E715	001	00BA	1000	1002
@@E716	001	00BB	1002	1004
@@E717	001	00BC	1004	1006
@@E718	001	00BD	1006	1008
@@E720	001	00BE	1008	1010
@@E721	001	00BF	1010	1012
@@E723	001	00C0	1012	1014
@@E724	001	00C1	1014	1016
@@E725	001	00C2	1016	1018
@@E726	001	00C3	1018	1020
@@E727	001	00C4	1020	1022
@@E728	001	00C5	1022	1024
@@E729	001	00C6	1024	1026
@@E730	001	00C7	1026	1028
@@E732	001	00C8	1028	1030
@@E752	001	00C9	1030	1032
@@E753	001	00CA	1032	1034
@@E754	001	00CB	1034	1036
@@E755	001	00CC	1036	1038
@@E756	001	00CD	1038	1040
@@E757	001	00CE	1040	1042
@@E758	001	00CF	1042	1044
@@E759	001	00D0	1044	1046

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 41

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E760	001	00D1	1046	1048
@@E761	001	00D2	1048	1050
@@E762	001	00D3	1050	1052
@@E763	001	00D4	1052	1054
@@E764	001	00D5	1054	1056
@@E765	001	00D6	1056	1058
@@E766	001	00D7	1058	1060
@@E767	001	00D8	1060	1062
@@E768	001	00D9	1062	1064
@@E769	001	00DA	1064	1066
@@E770	001	00DB	1066	1068
@@E771	001	00DC	1068	1070
@@E772	001	00DD	1070	1072
@@E773	001	00DE	1072	1074
@@E774	001	00DF	1074	1076
@@E775	001	00E0	1076	1078
@@E776	001	00E1	1078	1080
@@E777	001	00E2	1080	1082
@@E778	001	00E3	1082	1084
@@E779	001	00E4	1084	1086
@@E780	001	00E5	1086	1088
@@E781	001	00E6	1088	1090
@@E782	001	00E7	1090	1092
@@E783	001	00E8	1092	1094
@@E784	001	00E9	1094	1096
@@E785	001	00EA	1096	1098
@@E786	001	00EB	1098	1100
@@E790	001	00EC	1100	1102
@@E791	001	00ED	1102	1104
@@E792	001	00EE	1104	1106
@@E793	001	00EF	1106	1108
@@E794	001	00F0	1108	1110
@@E795	001	00F1	1110	1112
@@E796	001	00F2	1112	1114
@@E797	001	00F3	1114	1116
@@E798	001	00F4	1116	1118
@@E800	001	FFFF	1146	
@@E801	001	FFFF	1148	
@@E802	001	FFFF	1150	
@@E803	001	FFFF	1152	
@@E804	001	FFFF	1154	
@@E900	001	00F5	1118	1120
@@E901	001	00F6	1120	1122
@@E902	001	00F7	1122	1124
@@E903	001	00F8	1124	1126
@@E905	001	00F9	1126	1128
@@E906	001	00FA	1128	1130
@@E910	001	00FB	1130	
@ARR	001	0008	0016	1849 2342 2380 2547 2549* 2550
@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	

CROSS REFERENCE																			
SYMBOL	LEN	VALUE	DEFN	REFERENCES												VER 15, MOD 00	03/03/22	PAGE	42
@BLANK	001	0040	0065	1955	1984	2347	2353	2416											
@BM	001	0082	0054																
@BNE	001	0001	0046	2338															
@BNH	001	0004	0044																
@BNL	001	0002	0045																
@BNM	001	0002	0057																
@BNOL	001	0020	0050																
@BNOZ	001	0008	0049																
@BNP	001	0004	0056																
@BNZ	001	0001	0058																
@BOL	001	00A0	0048																
@BOZ	001	0088	0047																
@BP	001	0084	0053																
@BR	001	0001	0013	1815	1822*	1835	1838	1885	1889	1892	1895	1898	1903	1903	1904				
				1904	1906	1906	1929	1936	1948	1983	1987	1987	1991	1999	2000*				
				2006*	2012	2031*	2037*	2050	2051*	2052*	2054	2056*	2057	2375	2377				
				2378*	2380	2382	2384	2384	2394	2394	2399	2399	2400	2400	2401				
				2401	2402	2402	2403	2403	2407	2408	2408	2411	2417	2418	2423				
				2424	2424	2426*	2546	2553*	2568	2569	2569*	2587*							
@BT	001	0010	0051																
@BZ	001	0081	0055																
@B1	001	0001	0063	2002	2410	2415	2548	2557	2560	2565	2568	2569							
@CADDR	001	0002	0142	1819	1880	1900	1904	1910	1959	2073									
@CARDL	001	0060	0087																
@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	2349															
@CPLUS	001	004E	0079																
@DADDR	001	0002	0140																
@DBFR1	001	0004	0129																
@DBFR2	001	0005	0130																
@DCALK	001	0001	0081																
@DCBCY	001	0009	0115																
@DCBT1	001	0050	0117																
@DCNT	001	0003	0128																
@DCST1	001	0040	0116																
@DCTRL	001	0000	0125	2071*															
@DCYL	001	0001	0126																
@DD2	001	0003	0030																
@DGET	001	0001	0134	2103															
@DOLAR	001	005B	0068																
@DOP2	001	0004	0028																
@DPLNG	001	0006	0132																
@DPOS	001	0000	0133																
@DPUT	001	0002	0135	2071															
@DSAD	001	0002	0127																
@DSBCY	001	0004	0106																
@DSCS1	001	0000	0107																
@DSIVF	001	0003	0138																
@DSPIN	001	0002	0131																

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 43

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@DVRFY	001	0031	0136	
@DWAIT	001	00FF	0137	
@DWBCY	001	0005	0103	
@DWSIZ	001	00C0	0105	
@DWTB1	001	0003	0104	
@DZERO	001	00F0	0064	1841
@D1	001	0002	0026	2394
@EOF	001	001C	0077	
@EOFTC	001	0075	0162	
@EOS	001	001E	0076	1832 1855 1859 1941 1945 1965 2355 2563
@FDDBC	001	0000	0195	
@FDE1	001	000C	0200	
@FDFNA	001	000B	0198	
@FDHLN	001	0002	0208	
@FDLNC	001	0002	0193	
@FDNSC	001	0003	0210	
@FDSD	001	0000	0206	
@FLACE	001	0009	0197	
@FLDBC	001	0001	0196	
@FLENT	001	0004	0201	
@FLFNA	001	0002	0199	
@FLHLN	001	0002	0209	
@FLLNC	001	0002	0194	
@FLNSC	001	0001	0211	
@FLSD	001	0001	0207	
@HDRLN	001	0007	0092	
@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	
@MAPEN	001	0005	0089	
@MINCR	001	2000	0083	
@MINUS	001	0060	0080	1828
@NOP	001	0080	0040	1878 2020 2063 2389 2463 2552
@NUMBR	001	007B	0070	
@OPD2	001	0004	0029	
@OP1	001	0003	0027	1849* 1872* 1921* 1950* 2023* 2050* 2342* 2377* 2380* 2546* 2547* 2548* 2550*
@OP2	001	0005	0031	
@PCTRL	001	0000	0149	
@PDATA	001	0003	0151	1904*
@PGCSZ	001	0020	0082	0083
@PPLNG	001	0004	0148	
@PRCNT	001	0001	0150	1889* 1892* 1895* 1898*
@PRETR	001	00C0	0154	2120
@PRINT	001	0040	0152	0154 2112
@PSR	001	0004	0015	2580*
@PWAIT	001	00FF	0158	
@P1IAR	001	0020	0018	
@P2IAR	001	0040	0019	
@Q	001	0001	0024	2020* 2042* 2049* 2063* 2361 2457 2461 2552* 2573* 2592
@REGL	001	0002	0012	

CROSS REFERENCE																
SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00 03/03/22 PAGE 44											
@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													
@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	2040	2059	2339	2350	2459	2573							
@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	1816*	1821*	1828	1832	1835	1838	1841	1855	1859	1863*	1872	1873	
				1873*	1876*	1882	1898	1905	1905*	1921	1941	1945	1948	1950	1951	
				1965	1973*	1979*	1984	1986	1986*	1991*	1998*	2005	2005*	2010	2023	
				2024	2024*	2030*	2038	2038*	2039	2039*	2042	2057	2343	2346	2346*	
				2347	2349	2352	2352*	2353	2355	2357	2382	2391	2407	2410	2410*	
				2415	2415*	2416	2423	2554	2557	2557*	2558	2560	2560*	2561	2563	
@ZERO	001	0000	0062	2568	2583											
				1882	1925	1927	1954	1968	2049	2551	2554	2558	2561	2563	2568	
				2568*												
C4BCHC	001	0004	2451													
C4BCHR	001	10AD	2439	2407*	2408											
C4BINI	001	10AC	2437	2384												
C4BIN2	001	1041	2374	1922	2375	2378										
C4BLEN	002	10A9	2449	2423*	2424*											
C4BLNK	003	105C	2457													
C4BLOW	001	00F0	2453	2391												
C4BLVL	002	0002	2455	2384	2399	2400	2401	2402	2403	2408						
C4BNMC	004	1058	2461													

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00	03/03/22	PAGE	45
C4BSPC	001	0087	2459					
C4BVAL	002	10AB	2435	1925 1927 1929 1936 2002 2007* 2021* 2043 2045 2047 2052 2061*				
				2062 2384* 2399 2399* 2400 2401 2401* 2402 2402* 2403* 2408* 2455				
C4BWRK	002	10A9	2432	2400* 2403 2449 2455				
C4BYT1	001	10AA	2434					
C4B100	004	1057	2385	2461				
C4B200	003	105B	2389	2411 2457				
C4B300	003	105E	2391	2417				
C4B590	003	108D	2415	2394 2418				
C4B600	003	1090	2416	2389				
C4B700	003	1099	2423	2392				
C4B800	004	10A0	2426	2377* 2395				
C4B850	004	10A4	2428	2380*				
C4B900	001	10B0	2445	2385* 2394*				
C4END	001	10B1	2464					
KKEASN	001	0CEF	1920	1842				
KKEBCK	001	000B	2086	1825				
KKECC1	001	0001	2091	2021 2033 2043				
KKECC4	001	0004	2092	2045				
KKECC7	001	0007	2093	2047				
KKECKD	001	0E76	2102	1815 1819 1822 2071* 2073				
KKECK1	001	1200	2217	2051 2218				
KKECK2	001	1201	2218	2219				
KKECK3	001	1202	2219	2220				
KKECK4	001	1203	2220	2221				
KKECK5	001	1204	2221	2222				
KKECK6	001	1205	2222	2223				
KKECK7	001	1206	2223	2224				
KKECK8	001	1207	2224	2225				
KKECK9	001	1208	2225	2226				
KKECMD	001	1600	2242	1955* 1956 1956* 1959 1979 2012				
KKECNF	001	0E94	2136	1825* 1906* 1929 2065 2137				
KKEC10	001	1209	2226	2227				
KKEC11	001	120A	2227	2228				
KKED01	001	0E95	2139	1903				
KKEF04	001	00F4	2084	1885				
KKEKM1	001	1222	2230	2231				
KKEKM2	001	127C	2231	2232				
KKEKM3	001	12D6	2232	2233				
KKEKM4	001	1330	2233	2234				
KKEKM5	001	138A	2234	2235				
KKEKM6	001	13E4	2235	2236				
KKEKM7	001	143E	2236	2237				
KKEKM8	001	1498	2237	2238				
KKEKM9	001	14F2	2238	2239				
KKEK10	001	154C	2239	2240				
KKEK11	001	15A6	2240					
KKELCC	001	0E99	2142	1983* 1987*				
KKELIL	001	0004	2090	1835 1835 1873 2133				
KKELIS	004	0E8C	2133	1835				
KKELK1	001	0005	2151	1892 2152 2153				
KKELK2	001	0008	2155	2156 2157				
KKELK3	001	0004	2159	2160				
KKELK4	001	000C	2163	1889 2164 2165				
KKELK5	001	0004	2167	2168 2169				
KKELK6	001	0009	2171	2172 2173				

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00	03/03/22	PAGE	46
KKELK7	001	000B	2175	1895 2176 2177				
KKELK8	001	0003	2180	2181 2182				
KKELK9	001	0009	2184	2185 2186				
KKELST	001	0C8A	1871	1836				
KKEL02	001	0002	2083	1903 2039 2129				
KKEL05	001	0005	2082	2113 2126				
KKEL10	001	0011	2188	2189 2190				
KKEL11	001	000D	2192	2193 2194				
KKEL90	001	005A	2088	1955* 1956 1956 1956* 1980 2012 2012 2012* 2057 2057 2057* 2140				
				2231 2232 2233 2234 2235 2236 2237 2238 2239 2240				
KKENOD	001	0E7C	2111	1880				
KKENUM	002	0E86	2129	1885 1903*				
KKEONE	001	0E98	2141	1906 1987 2007 2036 2061				
KKEPPL	001	0E80	2119	1889* 1892* 1895* 1898* 1900 1904*				
KKEPP1	001	0E84	2125	2114 2127				
KKEQUO	001	007D	2087	1951				
KKEREL	001	0007	2089	1838 1838 1948 1948 2024 2134				
KKERES	007	0E93	2134	1838 1948				
KKERK1	002	0E9C	2152	2030				
KKERK2	002	0EA3	2156					
KKERK3	002	0EAD	2160					
KKERK4	002	0EAF	2164					
KKERK5	002	0EBD	2168					
KKERK6	002	0EC3	2172					
KKERK7	002	0ECE	2176					
KKERK8	002	0EDB	2181					
KKERK9	002	0EE0	2185					
KKER10	002	0EEB	2189					
KKER11	002	0EFE	2193					
KKETBL	001	1200	2215	1876 1998 2106				
KKETCM	001	1222	2228	2000 2031 2122 2230				
KKEVAL	001	0E9A	2143	1936* 2033 2036* 2062* 2065 2144				
KKEX90	002	0E97	2140	1904 2006 2037				
KKE050	004	0C24	1827	1824				
KKE070	004	0C51	1844	1829				
KKE100	004	0C55	1849	1874 2025				
KKE120	003	0C74	1859	1852				
KKE140	004	0C7E	1863	1872* 2023*				
KKE160	004	0C82	1864	1853 1856				
KKE180	004	0C86	1865	1849* 1857 1860				
KKE350	004	0C95	1876	1833				
KKE400	004	0C99	1878	1907				
KKE420	003	0CA3	1882					
KKE430	003	0CB8	1892	1886				
KKE440	003	0CBE	1895	1887				
KKE450	004	0CC4	1898	1883				
KKE460	004	0CC8	1899	1890 1893 1896				
KKE500	004	0CFA	1925					
KKE510	004	0D10	1932	1926 1928				
KKE520	004	0D17	1935	1930				
KKE540	003	0D33	1945	1939				
KKE600	004	0D40	1950					
KKE640	004	0D4A	1954					
KKE660	004	0D75	1971	1943 1952				
KKE680	004	0D79	1973	1921* 1923 1950* 1960				
KKE700	004	0D80	1976	1969				

CROSS REFERENCE

VER 15, MOD 00 03/03/22 PAGE 47

SYMBOL	LEN	VALUE	DEFN	REFERENCES
KKE720	004	0D87	1979	1966
KKE730	003	0D97	1984	1988
KKE740	004	0DA8	1990	1981
KKE750	003	0DAC	1991	1933
KKE760	004	0DAF	1992	1938 1963 1974 1977
KKE780	004	0DB3	1998	1985
KKE8CK	001	0008	2085	2138
KKE800	004	0DBB	2002	2008
KKE820	005	0DD3	2010	2003
KKE840	005	0DD8	2012	
KKE860	004	0DE0	2020	1839
KKE865	004	0DE8	2023	1949
KKE870	004	0DF3	2030	1942 1946
KKE880	004	0DFB	2033	2040
KKE890	004	0E08	2037	2066
KKE900	004	0E12	2040	2063*
KKE910	005	0E16	2042	2034
KKE920	004	0E30	2049	2044 2046
KKE930	004	0E34	2050	2048
KKE940	003	0E40	2054	2042* 2049*
KKE950	004	0E43	2056	2050*
KKE960	004	0E47	2057	
KKE970	003	0E4B	2059	2020*
KKE980	004	0E68	2071	2014 2059
SCACNT	002	1040	2367	1968 2357* 2358*
SCACOF	001	0087	2339	
SCACOM	001	0001	2338	1850 1935
SCAINC	001	0001	2337	2346 2352
SCAMMA	003	101D	2361	1850* 1935*
SCANIT	001	1000	2341	1831 1851 1937 1962
SCASVE	002	103E	2366	2343* 2358
SCASV1	001	103D	2365	
SCA100	003	100F	2346	2348
SCA200	003	1012	2347	2345
SCA250	003	101C	2350	2361
SCA300	003	101F	2352	2354
SCA400	004	102F	2357	2350
SCA500	004	1039	2360	2342* 2356
SCSCNT	001	1126	2596	1980 1983 2010 2551* 2565* 2571
SCSERR	002	112B	2599	2580
SCSFRC	001	00FF	2594	2583
SCSLNG	004	1102	2592	1954*
SCSPL1	002	1128	2597	2549 2565
SCSPL2	001	1129	2598	2548
SCSQUO	001	007D	2593	2554 2558 2561
SCSTRG	001	10B1	2545	1958
SCS005	004	10CF	2553	2550*
SCS006	003	10D9	2557	2574
SCS010	003	10EB	2563	2559
SCS020	003	10F7	2567	2552* 2573*
SCS025	004	1101	2571	2592
SCS029	004	110C	2574	2567 2572
SCS030	001	1110	2579	2555 2564
SCS040	003	111B	2583	2562
SCS050	004	111E	2587	2546* 2582
SCS051	004	1122	2588	2547* 2548*

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #KKEYS IS 4396 DECIMAL.

OL103 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 7
NAME-#KKEYS,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-R,CATEGORY-000

START ADDRESS	CATEGORY	NAME AND ENTRY	CODE LENGTH HEXADECIMAL	DECIMAL
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0C00	0	#KKEYS	112C	4396
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OL100	I	THE TOTAL CORE USED BY #KKEYS IS 4396 DECIMAL.		
OL101	I	THE START CONTROL ADDRESS OF THIS MODULE IS 0C00.		
OL104	I	TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 18		
		NAME-#KKEYS,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-O		