

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

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

#DSPLY - RELOCATING LOADER FOR CRT IOCS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/06/22 PAGE 2

0000		2	#DSPLY	START	0
		3		PRINT	ON,NODATA
		4	*	@SYS	EXP-N
		215+		PRINT	ON
		216	*	@HDW	EXP-N
		401+		PRINT	ON
		402	*	@FXD	EXP-N
		807+		PRINT	ON
		808	*	@CAN	EXP-N
		911+		PRINT	ON
		912	*	@CY0	EXP-N
		985+		PRINT	ON

#DSPLY - MODULE PROLOG

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	03/06/22	PAGE	3
		987		*****				
		988	*	5703-XM1 COPYRIGHT IBM CORP. 1970				*
		989	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE 120-2083				*
		990	*					*
		991		*****				*
		992	*	STATUS				*
		993	*	VERSION 1 MODIFICATION 0				*
		994	*					*
		995	*	FUNCTION				*
		996	*	DSPLYN IS THE IOCR USED FOR DISPLAYING PRINTER OUTPUT WHEN THE				*
		997	*	CRT IS DESIGNATED AS THE SYSTEM PRINTER.				*
		998	*	THE FUNCTIONS PROVIDED ARE:				*
		999	*	* PRINT - DATA IS DISPLAYED STARTING AT THE CURRENT DISPLAY				*
		1000	*	POSITION AND CONTINUING LINE BY LINE UNTIL ALL CHARACTERS HAVE				*
		1001	*	BEEN DISPLAYED. THE CURRENT POSITION WILL ALWAYS BE ON THE				*
		1002	*	BOTTOM LINE.				*
		1003	*	* PRINT AND RETURN - SAME AS PRINT EXCEPT THAT THE NEXT POSITION				*
		1004	*	TO BE DISPLAYED WILL BE AT THE START OF THE NEXT LINE.				*
		1005	*	* RETURN - THE NEXT POSITION TO BE DISPLAYED WILL BE AT THE START				*
		1006	*	OF THE NEXT LINE.				*
		1007	*	* TAB LEFT/TAB LEFT & INDEX - THE CURSOR (NEXT PRINT POSITION)				*
		1008	*	TO BE DISPLAYED WILL BE AT THE START OF NEXT LINE				*
		1009	*	IF THE CURSOR REACHES THE LEFT POSITION OF THE STATEMENT AND				*
		1010	*	THE COUNT IS NOT ZERO, IT WILL REMAIN THERE. CHARACTERS ARE				*
		1011	*	CLEARED TO BLANKS AS THE TAB LEFT PROCEEDS.				*
		1012	*	* WAIT - TESTS CRT FOR ERRORS.				*
		1013	*	THE FOLLOWING ARE FOR CRT ONLY, WHILE THE ABOVE ARE FOR EITHER				*
		1014	*	CRT OR SYSTEM PRINTER.				*
		1015	*	* ROLL DOWN AND PRINT - THIS CAUSES THE DISPLAYED LINES TO BE				*
		1016	*	ROLLED DOWN AND THE DATA TO BE DISPLAYED ON THE TOP LINE.				*
		1017	*	A MAXIMUM OF 64-BYTE CHARACTER STRING CAN BE USED WITH THIS				*
		1018	*	FUNCTION.				*
		1019	*					*
		1020	*	ENTRY POINTS				*
		1021	*	FOR NORMAL SYSTEM PRINTER, THE CALLING SEQUENCE IS:				*
		1022	*	B \$SPRNT				*
		1023	*	DC AL2(PPL)				*
		1024	*	FOR A DIRECT CALL TO 'PRINT' ON THE CRT, THE CALLING				*
		1025	*	SEQUENCE IS:				*
		1026	*	B \$\$PLYN				*
		1027	*	DC AL2(PPL)				*
		1028	*	FOR A DIRECT CALL TO PRINT ON BOTH THE CRT AND MATRIX PRINTER,				*
		1029	*	THE CALLING SEQUENCE IS:				*
		1030	*	B \$\$PYMP				*
		1031	*	DC AL2(PPL)				*
		1032	*	TO CLEAR THE CRT SCREEN, THE CALLING SEQUENCE IS:				*
		1033	*	B \$\$PYCD				*
		1034	*	'PPL' IS THE ADDRESS OF THE PRINT PARAMETER LIST.				*
		1035	*					*
		1036	*	INPUT				*
		1037	*	INPUT IS THE ADDRESS OF THE PRINT PARAMETER LIST WHICH APPEARS				*
		1038	*	FOLLOWING THE BRANCH IN THE CALLING SEQUENCE.				*
		1039	*					*
		1040	*	OUTPUT				*
		1041	*	THE OUTPUT IS THE DISPLAYED DATA ON THE SYSTEM PRINTER(CRT),				*
		1042	*					*

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 4
		1043	*	*EXTERNAL REFERENCES	*
		1044	*	DSPLYT - ENTRY POINT TO PRINT CRT FAILURE MESSAGE ON MATRIX	*
		1045	*	PRINTER.	*
		1046	*	\$CRTUP - ROLL UP KEY INDICATOR	*
		1047	*	SCRTDN - ROLL DOWN KEY INDICATOR	*
		1048	*	\$CRTPU - POP-UP KEY INDICATOR	*
		1049	*	\$PRDEV - INDICATOR FOR SYSTEM PRINTER DEVICE	*
		1050	*	\$CIMSR - IR MASKED INDICATOR	*
		1051	*	\$UNMSK - ENTRY TO UNMASK IR	*
		1052	*	\$HIST1 - LOCATION OF HISTORY TABLE ENTRY	*
		1053	*	\$ERCNI - LOCATION TO SAVE ERROR COUNTER DISPLACEMENT	*
		1054	*	\$\$PRNT - ENTRY TO MATRIX PRINTER IOCS	*
		1055	*	SERPND - INDICATOR FOR ERROR PENDING TO BE LOGGED	*
		1056	*	\$HRDER - INDICATOR FOR HARD ERROR	*
		1057	*		*
		1058	*	*EXITS, NORMAL	*
		1059	*	EXIT WILL BE TO THE CALLING PROGRAM.	*
		1060	*		*
		1061	*	*EXITS, ERROR	*
		1062	*	SEE ERROR PROCEDURES UNDER NOTES.	*
		1063	*		*
		1064	*	*TABLES/WORK AREAS	*
		1065	*	A 4-BYTE WORK AREA IS ALLOCATED FOR STORAGE OF THE PPL.	*
		1066	*	IT IS USED FOR REFERENCINC THE FUNCTION DESIRED.	*
		1067	*		*
		1068	*	*ATTRIBUTES	*
		1069	*	DSPLYN IS RELOCATABLE AND REUSABLE.	*
		1070	*		*
		1071	*	*CHARACTER CODE DEPENDENCY	*
		1072	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON ANY PARTICULAR	*
		1073	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER	*
		1074	*		*
		1075	*	*NOTES	*
		1076	*	ERROR PROCEDURES	*
		1077	*	IF A DATA REGISTER PARITY CHECK IS ENCOUNTERED, THE DISPLAY	*
		1078	*	UNIT IS TURNED OFF AND THEN REACTIVATED. A 100MS LOOP IS	*
		1079	*	EXECUTED AND THEN ANOTHER TEST FOR ERRORS MADE. IF NO ERRORS	*
		1080	*	RESULT, THE ERROR PENDING INDICATOR IS SET INDICATING AN ERROR	*
		1081	*	IS TO BE LOGGED, AND NORMAL PROCESSING IS CONTINUED. IF THE	*
		1082	*	ERROR IS STILL PRESENT, THE HARD ERROR INDICATOR IS SET AND	*
		1083	*	IOCS EXITS TO THE CALLING PROGRAM (A HARD HALT WILL BE	*
		1084	*	EXECUTED BY NERLOG WHEN THE ERROR IS LOGGED).	*
		1085	*		*
		1086	*	REGISTER USAGE	*
		1087	*	THE STATUS OF BOTH THE INDEX AND BASE REGISTERS IS SAVED UPON	*
		1088	*	ENTRY TO AND RESTORED UPON EXIT FROM DSPLYN.	*
		1089	*		*
		1090	*	SAVED/RESTORED AREAS	*
		1091	*	N/A.	*
		1092	*		*
		1093	*	MODIFICATION CONSIDERATIONS	*
		1094	*	N/A.	*
		1095	*		*
		1096	*	REQUIRED MODULES	*
		1097	*	@SYSEQ - COMMON SYSTEM EQUATES.	*
		1098	*	@HMWEQ - HARDWARE EQUATES.	*

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22	PAGE 5
					1099	*	@FXDEQ - SYSTEM NUCLEUS AND INDICATOR VALUE EQUATES.		*
					1100	*	@CANEQ - COMMON CORE LOCATIONS OUTSIDE NUCLEUS EQUATES.		*
					1101	*	@CY0EQ - CYLINDER ZERO EQUATES.		*
					1102	*			*
					1103	*	OTHER		*
					1104	*	N/A.		*
					1105	*****			
				0100	1107	DSLBSL	EQU 256	LENGTH OF BASE EXTENSION	
2800					1108		ORG X'2800'	ORIGIN	
				2800	1109		USING DSLBSE,@BR	BASE VALUE	
				2800	1110	DSLBSL	EQU *	BASE VALUE	
2800	34	01	03C5		1111		ST \$BRSAV,@BR	SAVE BASE REG	
2804	35	01	044D		1112		L \$CRTAD,@BR	LOAD BASE REG	
2808	74	02	2A		1113		ST DSL090+@OP1(,@BR),@XR	SAVE XR	
280B	74	08	32		1114		ST DSL100+@OP1(,@BR),@ARR	SAVE RETURN ADDR	
280E	3D	10	043B		1115		CLI \$EXFTR,@4K	TEST FOR 12K STOR SIZE	
2812	F2	02	25		1116		JNL DSL200	DO RELOCATION IF NOT	
2815	D1	92	1B		1117	DSL050	TIO DSL052(,@BR),@DSBSY	TEST IF CRT ON SYSTEM	
2818	F2	87	03		1118		J DSL053	DON'T TURN OFF DSPLAY	
281B	F3	90	00		1120	DSL052	SIO 0,@CRTQ	TURN OFF CRT	
281E	4E	00	25 043B		1121	DSL053	ALC DSL055+@D1(1,@BR),\$EXFTR	GET TRUE ADDRESS	
2823	C0	87	2200		1122	DSL055	B \$\$PYCD	CLEAR CRT BUFFER	
2827	C2	02	0000		1123	DSL090	LA *-*,@XR	RESTORE XR	
282B	35	01	03C5		1124		L \$BRSAV,@BR	RESTORE BR	
282F	C0	87	0000		1125	DSL100	B *-*	RETURN TO CALLER	
					1126	*****			

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE	6
				3900	1128	DSLBSX	EQU	DSLBSX			
				3900	1128	DSLBSX	EQU	DSLBSX			
2833	3900			2834	1129	DSPLYA	DC	AL2(DSLBSX)			
2835	10			2835	1130	DSLC4K	DC	AL1(@4K)			
2836	1000			2837	1131	DSLFTTR	DC	XL2'1000'			
2838	0100			2839	1132	DSL256	DC	AL2(DSLBSL)			

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE	7
				283A	1134	DSL200	EQU *				ENTRY TO RELOCATE ADDR
283A	75	02	34		1135		L DSPLYA(,@BR),@XR				LOAD INDEX REG
				2900	1136		USING DSPYMP,@XR				ADDR OF IOCS
283D	9E	01	03 37		1137		ALC DSR005(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2841	9E	01	07 37		1138		ALC DSR010(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2845	9E	01	0B 37		1139		ALC DSR020(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2849	9E	01	3A 37		1140		ALC DSR025(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
284D	9E	01	4F 37		1141		ALC DSR030(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2851	9E	01	8C 37		1142		ALC DSR070(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2855	9E	01	93 37		1143		ALC DSR080(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2859	9E	01	97 37		1144		ALC DSR090(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
285D	9E	01	99 37		1145		ALC DSR100(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2861	9E	01	9B 37		1146		ALC DSR110(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1147	*					
2865	76	02	39		1148		A DSL256-DSLBSE(,@BR),@XR				INCREMENT INDEX VALUE
				2A00	1149		USING DSPYMP+DSLBLSL,@XR				NEXT 256 BYTES
2868	9E	01	36 37		1150		ALC DSR130(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
286C	9E	01	43 37		1151		ALC DSR140(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2870	9E	01	4C 37		1152		ALC DSR150(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2874	9E	01	70 37		1153		ALC DSR240(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2878	9E	01	74 37		1154		ALC DSR250(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1155	*					
287C	C2	02	3B00		1156		LA DSPCMD+4096,@XR				SET NEW BASE VALUE
				2B00	1157		USING DSPCMD,@XR				NEW BASE VALUE
2880	9E	01	03 37		1158		ALC DSR260(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2884	9E	01	07 37		1159		ALC DSR270(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2888	9E	01	0B 37		1160		ALC DSR275(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
288C	9E	01	0F 37		1161		ALC DSR280(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
2890	9E	01	84 37		1162		ALC DSR290(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1163	*					
2894	D0	87	15		1164		B DSL050-DSLBSE(,@BR)				GO EXIT

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE	8
					1166	*****					
					1167	* PATCH AREA 1					*
					1168	*****					
					1169	*					
					1170	* CALCULATE AREA LEFT IN THIS SECTOR					
					1171	*					
2900				2897	1172	\$\$\$\$L1 EQU *	START OF PATCH AREA 1				
					1173	ORG *,256,0	SET LOC CNTR TO NEXT SECTOR				
				2900	1174	\$\$\$\$T1 EQU *	DEFINE ADDR OF SCTR BNDRY				
2897					1175	ORG \$\$\$\$L1	SET LOC CNTR TO START OF				
					1176	*	* PATCH AREA				
2897				28FF	1177	\$\$\$\$\$1 DS CL(\$\$\$\$T1-\$\$\$\$L1)	PATCH AREA				
					1178	*****					
					1179	*** END OF EXPANSION ***					

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 9
		1181		*****	
		1182	*	THIS IOCR IS USED FOR ALL CRT OUTPUT AND CONTROL, IT CONTAINS	*
		1183	*	ENTRY POINTS FOR NORMAL DISPLAY (DSPLYN), PRINTER FAILURES	*
		1184	*	(PRFAIL), AND COMMAND KEY CONTROLS (DSCMND). ENTRY TO 'DISPLYN'	*
		1185	*	PROVIDES FOR 7 FUNCTIONS...	*
		1186	*	X'40' PRINT ONLY	*
		1187	*	X'C0' PRINT AND RETURN CURSOR	*
		1188	*	X'80' RETURN CURSOR	*
		1189	*	X'11' BACKSPACE	*
		1190	*	X'10' BACKSPACE	*
		1191	*	X'4F' ROLL DOWN AND PRINT	*
		1192	*	X'FF' WAIT AND CHECK FOR ERRORS	*
		1193		*****	
2900		2924	1194	USING DSBASE,@BR	BASE VALUE FOR DSPLYN
			1195	ORG DSLBSE+X'0100'	STARTING ADDRESS
2900 3C 80 2945		2900	1196 DSPYMP EQU *	ENTRY TO PRINT ON CRT AND MP	
			1197 MVI DS0053+@Q,@NOP	SET BRANCH FO MATRIX PRINTER	
		2903	1198 DSR005 EQU *-1	RELOCATABLE ADDRESS	
		2904	1199 DSPLYN EQU *	ENTRY TO DSPLYN	
2904 34 01 2975			1200 ST DS0100+@OP1,@BR	SAVE BASE REGISTER	
		2907	1201 DSR010 EQU *-1	RELOCATABLE ADDRESS	
2908 C2 01 2924			1202 LA DSBASE,@BR	LOAD BASE REGISTER	
		290B	1203 DSR020 EQU *-1	RELOCATABLE ADDRESS	
290C 74 02 55			1204 ST DS0110+@OP1(,@BR),@XR	SAVE INDEX REGISTER	
290F 76 08 61			1205 A DSC001(,@BR),@ARR	POINT TO PARM	
2912 74 08 03			1206 ST DS0050+@OP1(,@BR),@ARR	STORE FOR XR	
2915 76 08 61			1207 A DSC001(,@BR),@ARR	CALC RETURN ADDR	
2918 74 08 59			1208 ST DS0120+@OP1(,@BR),@ARR	SET RETURN BRANCH	
			1209 *		
291B D1 92 00			1210 TIO DS0050(,@BR),@DSBSY	BRANCH IF CRT IS DISPLAYING	
291E 71 90 73			1211 LIO DSBUFA(,@BR),@CRTQ	LOAD LSR WITH DISPLAY BUFR ADDR	
2921 F3 92 00			1212 SIO 0,@CRTDS	START DISPLAYING BUFFER	
2924 35 02 0000			1213 DS0050 L *-*,@XR	LOAD XR WITH PPL ADDR	
2928 6C 03 66 03			1214 MVC DSLIST+@PDATA(@PLNGH,@BR),@PDATA(,@XR)	MOVE IN PPL	
292C 0C 0D 0462 045B			1215 MVC \$PLST3(2*@DPLNG+2),\$PLST2	PUSH DOWN PARM LIST STACK	
2932 1C 06 0454 68			1216 MVC \$PLST1(@DPLNG+1),DSLST+@DPLNG-1(,@BR)	SAVE PPL	
2937 C1 90 2A50			1217 TIO DSDOWN,@CRERR	BRANCH IF CRT ERROR	
		293A	1218 DSR025 EQU *-1	RELOCATABLE ADDRESS	
293B F2 FF 00			1219 JC DS0052,X'FF'	CLEAR PSR FALSE/TRUE BIT	
293E 7D 4F 63			1220 DS0052 CLI DSLIST+@PCTRL(,@BR),@RLDWN	ROLL DOWN REQUESTED	
2941 F2 81 D4			1221 JE DS0250	GO ROLL DOWN	
2944 F2 87 09			1222 DS0053 JC DS0055,@UCB	JUMP IF NO MATRIX PRINTER OP	
2947 7C 87 21			1223 MVI DS0053+@Q(,@BR),@UCB	SET NEXT OP FOR CRT ONLY	
294A C0 87 0465			1224 B \$SPRNT	GO PRINT ON MP	
294E 2987		294F	1225 DC AL2(DSLIST)	PPL ADDR	
		294F	1226 DSR030 EQU *-1	RELOCATABLE ADDRESS	
2950 78 40 63			1227 DS0055 TBN DSLIST+@PCTRL(,@BR),@PRINT	DOES OP PRINT ?	
2953 F2 10 85			1228 JT DS0200	JUMP IF YES	
2956 78 80 63			1229 DS0060 TBN DSLIST+@PCTRL(,@BR),@RETRN	CARRIAGE RETURN REQUESTED ?	
2959 F2 90 03			1230 JF DS0070	JUMP IF NO	
295C D0 87 85			1231 DS0065 B DSINDX(,@BR)	GO INDEX BUFFER	
295F 78 10 63			1233 DS0070 TBN DSLIST+@PCTRL(,@BR),@BKSPC	BACKSPACE REQUESTED	
2962 F2 90 0D			1234 JF DS0100	JUMP IF NO	
2965 5F 01 68 61			1235 SLC DSCPOS(@CADDR,@BR),DSC001(,@BR)	SET CURRENT POS BACK ONE	
2969 75 02 68			1236 L DSCPOS(,@BR),@XR	XR POINTS TO NEW POSITION	

[illegible]

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 11
				2924	1244	DSBASE	EQU DS0050	BASE ADDR
				297E	1245	DSHIST	EQU *	HISTORY ENTRY (8 BYTES)
297E	92			297E	1246		DC AL1(@CRTDS)	SIO Q BYTE
297F	00			297F	1247		DC XL1'00'	SIO CTRL BYTE
2980				2981	1248	DSSENSE	DS CL2	SENSE BYTES
2982	0000			2983	1249		DC XL2'0000'	UNUSED
2984	0001			2985	1250	DSC001	DC XL2'0001'	CONSTANT OF ONE
2986	C3			2986	1251		DC CL1'C'	PPL CODE FOR CRT (FE MAP)
				2987	1252	DSL1ST	EQU *	PPL ADDR.
2987				298A	1253		DS CL4	PPL
298B	2F81			298C	1254	DSCPOS	DC AL2(DSLIN1)	CURRENT POSITION ADDR
				298C	1255	DSR070	EQU DSCPOS	RELOCATABLE ADDRESS
298D				298D	1256	DSCNTR	DS CL1	LOOP COUNTER
298E	0040			298F	1257	DSC064	DC AL2(@DLNLG)	LENGTH OF LINE
2990	FFC0			2991	1258	DSN064	DC AL2(0-@DLNLG)	NEG LINE LENGTH
2992	2904			2993	1259	DSPADD	DC AL2(DSPLYN)	ADDR OF DISPLAY ENTRY
				2993	1260	DSR080	EQU DSPADD	RELOCATABLE ADDRESS
2994	0707			2995	1261	DSPRNT	DC AL2(\$\$PRNT)	ADDR OF DPRINT
2996	2C01			2997	1262	DSBUFA	DC AL2(DSLINF)	ADDR OF START OF DSPLY BUF
				2997	1263	DSR090	EQU DSBUFA	RELOCATABLE ADDRESS
2998	2FC1			2999	1264	DSEINDB	DC AL2(DSBFEN)	ADDR OF BYTE FOLLOWING BUFR
				2999	1265	DSR100	EQU DSEINDB	RELOCATABLE ADDRESS
299A	2F41			299B	1266	DSL1N1A	DC AL2(DSLIN2)	ADDR OF START OF LINE 1
				299B	1267	DSR110	EQU DSL1N1A	RELOCATABLE ADDRESS
299C	0C			299C	1268	DSPSNS	DC AL1(@CKY12)	COMMAND KEY SNS BYTE
299D				299E	1269	DSCNTC	DS CL2	CLEAR CRT COUNTER
299F	16			299F	1270	DSP1CT	DC XL1'16'	LOOP VALUE FOR 100MS
29A0	0C			29A0	1271	DSPK12	DC AL1(@CKY12)	COMMAND KEY 12 LIO CNTR
29A1	0D			29A1	1272	DSPK13	DC AL1(@CKY13)	COMMAND KEY 13 LIO CNTR
29A2	0E			29A2	1273	DSPK14	DC AL1(@CKY14)	COMMAND KEY 14 LIO CNTR
29A3	0F			29A3	1274	DSPK15	DC AL1(@CKY15)	COMMAND KEY 15 LIO CNTR
29A4	10			29A4	1275	DSPK16	DC AL1(@CKY16)	COMMAND KEY 16 LIO CNTR
29A5				29A5	1276	DSINIT	DS CL1	BUFFER START ADDR SAVE AREA
29A6				29A6	1277	DSINCT	DS CL1	COUNTER FOR CLEAR OPERATION
				00C1	1278	DSP193	EQU 193	193
				00C0	1279	DSP192	EQU 192	192
29A7	00C0			29A8	1280	DSPPRO	DC AL2(DSP192)	INCREMENT FACTOR FOR CLEAR
				0005	1281	DSP005	EQU 5	TOTAL FOR CLEAR LOOP

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE 12
				2924	1283		USING DSBASE,@BR			BASE VALUE FOR INDEX
				29A9	1284	DSINDEX	EQU *			ENTRY TO INDEX A LINE
	29A9	74	08	B6	1285		ST DSI050+@OP1(,@BR),@ARR			SAVE RETURN ADDR
	29AC	75	02	68	1286		L DSCPOS(,@BR),@XR			XR = CURRENT POSITION
	29AF	BA	40	00	1287		SBN 0(,@XR),@CURSR			TURN CURSOR OFF
	29B2	75	02	73	1288		L DSBUFFA(,@BR),@XR			XR POINTS TO TOP LINE
	29B5	7C	0E	69	1289		MVI DSCNTR(,@BR),@DLNCT-1			SET LOOP COUNTER
	29B8	AC	3F	3F 7F	1290	DSI010	MVC @DLNLG-1(@DLNLG,@XR),2*@DLNLG-1(,@XR)			MOVE LINE UP
	29BC	76	02	6B	1291		A DSC064(,@BR),@XR			INCR BUF POINTER TO NEXT LINE
	29BF	5F	00	69 61	1292		SLC DSCNTR(1,@BR),DSC001(,@BR)			DECREMENT COUNTER
	29C3	D0	84	94	1293		BH DSI010(,@BR)			BRANCH IF MORE LINES
	29C6	BC	40	40	1294		MVI @DLNLG(,@XR),@BLANK			SET BLANK
	29C9	AC	3F	3F 40	1295		MVC @DLNLG-1(@DLNLG,@XR),@DLNLG(,@XR)			CLEAR BOTTOM LINE
	29CD	BB	40	00	1296		SBF 0(,@XR),@CURSR			SET CURSOR ON
	29D0	74	02	68	1297		ST DSCPOS(,@BR),@XR			SET CURRENT POSITION
	29D3	3C	00	03E2	1298		MVI \$CRPOS,@ZERO			SET CURSOR POSITION TO ZERO
	29D7	C0	87	0000	1299	DSI050	B *-*			RETURN

#DSPLY - MODULE PROLOG

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 03/06/22 PAGE 13

			2924	1301	USING	DSBASE,@BR	BASE SPECIFICATION
			29DB	1302	DS0200 EQU	*	ENTRY TO PRINT
29DB	7D	FF	63	1303	CLI	DSLST+@PCTRL(,@BR),@PWAIT	WAIT ONLY FUNCTION
29DE	D0	81	4E	1304	BE	DS0100(,@BR)	EXIT IF YES
				1305	*		
				1306	*	NORMAL PRINTING REQUIRED	
				1307	*		
29E1	75	02	68	1308	DS0210 L	DSCPOS(,@BR),@XR	LOAD DISPLAY POS
29E4	5C	01	C8 66	1309	MVC	DS0215+@DOP2(@CADDR,@BR),DSLST+@PDATA(,@BR)	SET DATA
29E8	8C	00	00 0000	1310	DS0215 MVC	0(1,@XR),*-*	MOVE CHAR TO DISPLAY BUFR
29ED	5E	01	68 61	1311	ALC	DSCPOS(@CADDR,@BR),DSC001(,@BR)	INCREMENT DISPLAY POS
29F1	1E	00	03E2 61	1312	ALC	\$CRPOS,DSC001(1,@BR)	INCREMENT CURSOR POSITION FOR
				1313	*		* PROCESSOR PRINT ROUTINE
29F6	5F	00	64 61	1314	SLC	DSLST+@PRCNT(1,@BR),DSC001(,@BR)	DECREMENT DATA COUNT
29FA	F2	81	0E	1315	JZ	DS0220	JUMP OUT IF FINISHED
29FD	5D	01	68 75	1316	CLC	DSCPOS(@CADDR,@BR),DSENB(,@BR)	IS LINE FULL
2A01	D0	81	85	1317	BE	DSINDX(,@BR)	BRANCH TO INDEX IF YES
2A04	5E	01	66 61	1318	ALC	DSLST+@PDATA(@CADDR,@BR),DSC001(,@BR)	INCREMENT DATA ADDR
2A08	D0	87	BD	1319	B	DS0210(,@BR)	GO MOVE NEXT CHAR
2A0B	BB	40	01	1321	DS0220 SBF	1(,@XR),@CURSR	SET CURSOR AT NEXT POSITION
2A0E	5D	01	68 75	1322	CLC	DSCPOS(@CADDR,@BR),DSENB(,@BR)	BUFFER FULL ?
2A12	D0	01	32	1323	BNE	DS0060(,@BR)	IF NOT, GO CHECK RETURN OP
2A15	D0	87	38	1324	B	DS0065(,@BR)	IF YES, DO RETURN OP
				1325	*		
				1326	*	ENTRY TO ROLL DOWN AND PRINT ON TOP LINE	
				1327	*		
2A18	7C	0D	69	1328	DS0250 MVI	DSCNTR(,@BR),@DLNCT-2	SET NUMBER OF LINES TO MOVE
2A1B	75	02	77	1329	L	DSLNL1A(,@BR),@XR	POINT XR TO START OF BOTTOM IN
2A1E	76	02	6D	1330	DS0260 A	DSN064(,@BR),@XR	DECREMENT XR BY LINE LENGTH
2A21	AC	3F	7F 3F	1331	MVC	2*@DLNLG-1(@DLNLG,@XR),@DLNLG-1(,@XR)	MOVE A LINE DOWN
2A25	5F	00	69 61	1332	SLC	DSCNTR(1,@BR),DSC001(,@BR)	DECREMENT COUNTER
2A29	D0	84	FA	1333	BH	DS0260(,@BR)	GO MOVE NEXT LINE IF MORE
2A2C	BC	40	3F	1334	MVI	@DLNLG-1(,@XR),@BLANK	SET BLANK AS LAST CHAR OF TOP
2A2F	9C	3E	3E 3F	1335	MVC	@DLNLG-2(@DLNLG-1,@XR),@DLNLG-1(,@BR)	LINE AND CLEAR IT
2A33	1C	01	2A3C 66	1336	MVC	DS0270+@DOP2(@CADDR),DSLST+@PDATA(,@BR)	SET DATA ADDR
			2A36	1337	DSR130 EQU	*-2	RELOCATABLE ADDRESS
2A38	8C	00	00 0000	1338	DS0270 MVC	0(1,@XR),*-*	MOVE DATA CHAR TO DISPLAY BUF
2A3D	76	02	61	1339	A	DSC001(,@BR),@XR	BUMP BUFFER POINTER
2A40	1E	01	2A3C 61	1340	ALC	DS0270+@DOP2(@CADDR),DSC001(,@BR)	INCREMENT DATA ADDR
			2A43	1341	DSR140 EQU	*-2	RELOCATABLE ADDRESS
2A45	5F	00	64 61	1342	SLC	DSLST+@PRCNT(1,@BR),DSC001(,@BR)	DECREMENT CHAR COUNT
2A49	C0	84	2A38	1343	BH	DS0270	BRANCH IF MORE CHARS
			2A4C	1344	DSR150 EQU	*-1	RELOCATABLE ADDRESS
2A4D	D0	87	4E	1345	B	DS0100(,@BR)	GO EXIT

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE 14
				2A50	1347	DSDOWN	EQU *			ENTRY TO ERP
	2A50	70	92	5D	1348		SNS DSENSE(,@BR),@CRTDS			SENSE STATUS
	2A53	70	90	5F	1349		SNS DSENSE+@REGL(,@BR),@CRTQ			SENSE LSR FOR @BR
	2A56	1C	07	0435	61	1350	MVC \$HIST1(#HISLN),DSHIST+#HISLN-1(,@BR)			SET HISTORY ENTRY
	2A5B	3A	04	03D5	1351		SBN \$INDR2,\$ERPND			INDICATE ERROR
	2A5F	F3	90	00	1352		SIO 0,@CRTQ			TURN OFF CRT
	2A62	F3	92	00	1353		SIO 0,@CRTDS			TURN ON CRT
	2A65	5C	01	7A	7B	1354	MVC DSCNTC(2,@BR),DSPICT(,@BR)			SET UP 100 MS LOOP
	2A69	5F	01	7A	61	1355	DSD100 SLC DSCNTC(2,@BR),DSC001(,@BR)			DECREMENT COUNTER
	2A6D	C0	84	2A69	1356		BH DSD100			LOOP FOR 100 MS
				2A70	1357	DSR240	EQU *-1			RELOCATABLE ADDRESS
	2A71	C1	90	2A78	1358		TIO DSD150,@CRERR			ANOTHER ERROR
				2A74	1359	DSR250	EQU *-1			RELOCATABLE ADDRESS
	2A75	D0	87	1A	1360		B DS0052(,@BR)			IF NOT ERROR, CONTINUE PROCESS
	2A78	3A	20	03D2	1361	DSD150	SBN \$IOIND,\$HRDER			SET HARD ERROR INDR
	2A7C	D0	87	4E	1362		B DS0100(,@BR)			GO EXIT DSPLYN
					1363	*****				
				2A7F	1364	\$\$\$\$L2	EQU *			START OF PATCH AREA 2
	2A7F			2AFF	1365	\$\$\$\$\$2	DS XL(\$\$PYCD+X'0900'-\$\$\$L2)			PATCH AREA

#DSPLY - COMMAND KEY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 15
					1367		*****	
					1368	*	THIS ROUTINE IS ENTERED WHEN A COMMAND KEY IS SENSED.	*
					1369	*	VARIOUS INDICATORS ARE SET IF A ROLL COMMAND IS DETERMINED.	*
					1370		*****	
	2B00				1371	ORG	\$\$PYCD+X'0900'	ORIGIN FOR CMND KEY PROCESSING
				2924	1372	USING	DSBASE,@BR	BASE VALUE
	2B00	34	08	2B99	1373	DSPCMD EQU	*	ENTRY FOR COMMAND KEY PROCESS
				2B03	1374	ST	DSP100+@OP1,@ARR	SAVE RETURN ADDR
	2B04	34	01	2B95	1375	DSR260 EQU	*-1	RELOCATABLE ADDRESS
					1376	ST	DSP095+@OP1,@BR	SAVE BR
	2B08	C2	01	2924	1377	DSR270 EQU	*-1	RELOCATABLE ADDRESS
					1378	LA	DSBASE,@BR	LOAD BASE REG
	2B0C	34	02	2B91	1379	DSR275 EQU	*-1	RELOCATABLE ADDRESS
					1380	ST	DSP090+@OP1,@XR	SAVE XR
				2B0F	1381	DSR280 EQU	*-1	RELOCATABLE ADDRESS
	2B10	38	08	03D2	1382	TBN	\$IOIND,\$CMDKY	COMMAND KEYS REQUESTED ?
	2B14	F2	90	48	1383	JF	DSP040	JUMP IF NO
					1384	*		
	2B17	71	11	7D	1385	LIO	DSPK13(,@BR),@KEYBD+@CMLON	TURN COMMAND KEYS INDRS 13-16
	2B1A	71	11	7E	1386	LIO	DSPK14(,@BR),@KEYBD+@CMLON	* ON
	2B1D	71	11	7F	1387	LIO	DSPK15(,@BR),@KEYBD+@CMLON	*
	2B20	71	11	80	1388	LIO	DSPK16(,@BR),@KEYBD+@CMLON	*
	2B23	7D	10	78	1389	CLI	DSPSNS(,@BR),@CKY16	ROLL UP FUNCTION ?
	2B26	F2	01	07	1390	JNE	DSP010	JUMP NO
	2B29	3C	01	03D3	1391	MVI	\$CRTIN,\$CRTUP	SET ROLL UP INDR
	2B2D	71	10	80	1392	LIO	DSPK16(,@BR),@KEYBD+@CMOFF	TURN ROLL UP INDR OFF
					1393	*		
	2B30	7D	0F	78	1394	DSP010 CLI	DSPSNS(,@BR),@CKY15	ROLL STOP ?
	2B33	F2	01	07	1395	JNE	DSP020	JUMP NO
	2B36	3A	08	03D3	1396	SBN	\$CRTIN,\$CRTSP	SET STOP INDR
	2B3A	71	10	7F	1397	LIO	DSPK15(,@BR),@KEYBD+@CMOFF	TURN STOP INDR LIGHT OFF
					1398	*		
	2B3D	7D	0E	78	1399	DSP020 CLI	DSPSNS(,@BR),@CKY14	ROLL DOWN ?
	2B40	F2	01	0E	1400	JNE	DSP030	JUMP NO
	2B43	38	02	03D6	1401	TBN	\$INDR3,\$LIST	IS ROLL DOWN ALLOWED ?
	2B47	F2	90	07	1402	JF	DSP030	DON'T SET INDR IF NOT
	2B4A	3C	02	03D3	1403	MVI	\$CRTIN,\$CRTDN	SET ROLL DOWN INDR
	2B4E	71	10	7E	1404	LIO	DSPK14(,@BR),@KEYBD+@CMOFF	SET ROLL DOWN LIGHT OFF
					1405	*		
	2B51	7D	0D	78	1406	DSP030 CLI	DSPSNS(,@BR),@CKY13	POP UP KEY ?
	2B54	F2	01	08	1407	JNE	DSP040	JUMP NO
	2B57	3A	04	03D3	1408	SBN	\$CRTIN,\$CRTPU	SET POKUP INDR ON
	2B5B	3B	08	03D3	1409	SBF	\$CRTIN,\$CRTSP	SET ROLL STOP OFF
	2B5F	7D	0C	78	1410	DSP040 CLI	DSPSNS(,@BR),@CKY12	CLEAR COMMAND ?
	2B62	F2	01	26	1411	JNE	DSP080	JUMP TO EXIT IF NO
	2B65	7C	00	82	1412	MVI	DSINCT(,@BR),@ZERO	INITIALIZE COUNTER TO ZERO
	2B68	5C	01	81 73	1413	MVC	DSINIT(,@BR),DSBUFA(@CADDR,@BR)	SET BUFFER START ADDRESS
	2B6C	5E	01	81 84	1414	DSP050 ALC	DSINIT(,@BR),DSPPRO(@CADDR,@BR)	INCR ADDR FOR PROPAGATION
	2B70	75	02	81	1415	L	DSINIT(,@BR),@XR	SET POINTER TO BUFFER ADDR
	2B73	BC	40	01	1416	MVI	1(,@XR),@BLANK	PROPAGATE BLANKS TO INITIALLY
	2B76	AC	C0	00 01	1417	MVC	0(,@XR),1(DSP193,@XR)	* CLEAR CRT BUFFER
	2B7A	5E	00	82 61	1418	ALC	DSINCT(,@BR),DSC001(1,@BR)	INCREMENT COUNTER
	2B7E	7D	05	82	1419	CLI	DSINCT(,@BR),DSP005	IF CLEAR OPERATION NOT COMPLETE
	2B81	C0	01	2B6C	1420	BNE	DSP050	* GO PROPAGATE MORE BLANKS
				2B84	1421	DSR290 EQU	*-1	RELOCATABLE ADDRESS
	2B85	75	02	68	1422	L	DSCPOS(,@BR),@XR	GET CURRENT POSITION

#DSPLY - COMMAND KEY ROUTINE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		03/06/22	PAGE	16
2B88	BB	40 00		1423		SBF 0(,@XR),@CURSR					SET CURSOR ON
2B8B	7C	0C 78		1424	DSP080	MVI DSPSNS(,@BR),@CKY12					SET NEXT ENTRY TO DO CLEAR
				1425	*						
2B8E	C2	02 0000		1426	DSP090	LA *-*,@XR					RESTORE XR
2B92	C2	01 0000		1427	DSP095	LA *-*,@BR					RESTORE BR
2B96	C0	87 0000		1428	DSP100	B *-*					RETURN
				1429	*****						
			2B9A	1430	\$\$\$L3	EQU *					START OF PATCH AREA 3

#DSPLY - COMMAND KEY ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE 17
2C01		1432		ORG	X'2C01'			ORIGIN OF DISPLAY BUFFER
	2C01	1433	DSLINF	EQU	*			START OF TOP LINE
	2C41	1434	DSLINE	EQU	DSLINF+@DLNLG			START OF LINE 14
	2C81	1435	DSLIND	EQU	DSLINE+@DLNLG			START OF LINE 13
	2CC1	1436	DSLINC	EQU	DSLIND+@DLNLG			START OF LINE 12
	2D01	1437	DSLINB	EQU	DSLINC+@DLNLG			START OF LINE 11
	2D41	1438	DSLINA	EQU	DSLINB+@DLNLG			START OF LINE 10
	2D81	1439	DSLIN9	EQU	DSLINA+@DLNLG			START OF LINE 9
	2DC1	1440	DSLIN8	EQU	DSLIN9+@DLNLG			START OF LINE 8
	2E01	1441	DSLIN7	EQU	DSLIN8+@DLNLG			START OF LINE 7
	2E41	1442	DSLIN6	EQU	DSLIN7+@DLNLG			START OF LINE 6
	2E81	1443	DSLIN5	EQU	DSLIN6+@DLNLG			START OF LINE 5
	2EC1	1444	DSLIN4	EQU	DSLIN5+@DLNLG			START OF LINE 4
	2F01	1445	DSLIN3	EQU	DSLIN4+@DLNLG			START OF LINE 3
	2F41	1446	DSLIN2	EQU	DSLIN3+@DLNLG			START OF LINE 2
	2F81	1447	DSLIN1	EQU	DSLIN2+@DLNLG			START OF LINE 1
	2FC1	1448	DSBFEN	EQU	DSLIN1+@DLNLG			OVERFLOW BYTE FO BUFFER
	2FC2	1449	\$\$\$SL4	EQU	DSBFEN+1			START OF PATCH AREA
		1450	*					
		1451		PRINT	ON			
	FFFF	1452		END				

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$1	105	28FF	1177	
\$\$\$\$\$2	129	2AFF	1365	
\$\$\$\$L1	001	2897	1172	1175 1177
\$\$\$\$L2	001	2A7F	1364	1365
\$\$\$\$L3	001	2B9A	1430	
\$\$\$\$T1	001	2900	1174	1177
\$\$\$CMD	001	0020	0846	
\$\$\$DAT	001	0040	0845	
\$\$\$EPL	001	0091	0842	
\$\$\$ERN	001	0080	0896	
\$\$\$FUN	001	0010	0847	
\$\$\$NLN	001	00A0	0892	
\$\$\$SL4	001	2FC2	1449	
\$\$\$STD	001	0081	0841	
\$\$BNLN	001	0605	0822	0824
\$\$CDBS	001	08C0	0872	
\$\$CDND	001	0666	0831	
\$\$CDRD	001	0890	0870	0872
\$\$CKEY	001	0603	0820	
\$\$CKFF	001	0B3D	0852	
\$\$COFF	001	0B44	0851	
\$\$CSNS	001	209C	0881	
\$\$DATB	001	0BBF	0853	
\$\$EOSA	001	0AFE	0850	
\$\$ERSK	001	1C00	0891	
\$\$FITS	001	1D00	0899	
\$\$FLIB	001	06FF	0898	
\$\$ILEN	001	0601	0816	0818 0822
\$\$ILHD	001	0600	0814	0816
\$\$INLN	001	0607	0829	0831 0833
\$\$INND	001	06FA	0833	
\$\$KBDT	001	09E1	0840	0844
\$\$KBSN	001	09E2	0844	0849
\$\$KLD1	001	0600	0904	
\$\$KLD2	001	0700	0906	
\$\$KLD3	001	0C00	0908	
\$\$LPOS	001	09EB	0849	
\$\$PCNT	001	07E9	0865	
\$\$PLYN	001	2004	0879	
\$\$PRES	001	0890	0838	0840 0850 0851 0852 0853 0870
\$\$PRFL	001	2143	0883	
\$\$PRNT	001	0707	0859	0860 0864 0865 1261
\$\$PRTN	001	0782	0860	
\$\$PSIO	001	07CE	0864	
\$\$PYCD	001	2200	0885	1122 1365 1371
\$\$PYMP	001	2000	0877	0879 0881 0883 0885
\$\$SLIB	001	1C00	0894	
\$\$TPCD	001	0606	0824	0829
\$\$UPAR	001	0602	0818	0820
\$\$WSPB	001	1E00	0897	
\$\$XIND	001	06FF	0895	0898
\$\$ZERO	001	0000	0410	0411 0413 0414 0415 0419 0877
\$ABORT	001	0010	0523	
\$BASIC	001	0080	0581	
\$BIGCD	001	0080	0657	
\$BLDPL	001	0579	0790	0792

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$BLNOE	001	0569	0780	
\$BLOAD	001	0522	0771	0773 0776 0789 0790
\$BLRTN	001	0550	0779	0780
\$BRSAV	001	03C5	0468	0469 1111* 1124
\$BSADR	001	0587	0795	0797
\$BUFPT	001	03E3	0676	0677
\$CABLD	001	04B4	0749	0750
\$CAERK	001	0469	0726	0729
\$CAERR	001	03CD	0474	0476
\$CAIPL	001	049D	0745	0747
\$CALLI	001	0008	0666	
\$CARDI	001	0001	0437	
\$CARPL	001	04A1	0747	0749
\$CIENT	001	0483	0736	0737
\$CIEXT	001	0480	0735	0736
\$CIMSK	001	0476	0732	0735
\$CISUS	001	0496	0740	0745
\$CLBFR	001	0010	0624	
\$CMDKY	001	0008	0536	1382
\$CMODE	001	0002	0586	
\$CONFIG	001	03DD	0649	0659
\$CRPOS	001	03E2	0675	0676 1298* 1312*
\$CRTAD	001	044D	0714	0715 1112
\$CRTAV	001	0002	0530	
\$CRTDN	001	0002	0554	1403
\$CRTIN	001	03D3	0551	0558 1391* 1396* 1403* 1408* 1409*
\$CRTNO	001	0004	0533	
\$CRTPU	001	0004	0555	1408
\$CRTSP	001	0008	0556	1396 1409
\$CRTUP	001	0001	0553	1391
\$CRUSH	001	0080	0662	
\$CSDPL	001	050E	0761	0762
\$C0001	001	0464	0718	0724
\$DATE	001	043A	0699	0700
\$DBGUF	001	03E0	0661	0670
\$DBLOK	001	0001	0611	
\$DFDET	001	03E8	0682	0683
\$DISKN	001	0025	0413	
\$DKERR	001	0008	0592	
\$DKSIZ	001	03D7	0636	0644 0685
\$DK100	001	0001	0638	
\$DK200	001	0002	0639	
\$DK400	001	0004	0640	
\$DK600	001	0008	0641	
\$DK800	001	0010	0642	
\$DPLSV	001	0449	0710	0712
\$DTNMB	001	0040	0457	
\$DTRDR	001	0040	0545	
\$ENDNU	001	0600	0804	0814 0838 0859 0895 0904 0906 0908
\$ERDPL	001	046F	0729	0731
\$ERFIL	001	0040	0484	
\$ERHRD	001	0004	0616	
\$ERKEY	001	0080	0488	
\$ERLOG	001	0345	0418	
\$ERMAD	001	0472	0731	0732
\$ERPND	001	0004	0589	1351

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$ERRCT	001	03CF	0490	
\$ERRPG	001	03CE	0478	
\$ERSFL	001	0035	0483	
\$ERSTK	001	0030	0481	
\$ER050	001	0363	0419	
\$ER1N2	001	0050	0486	
\$EXADR	001	0517	0764	0766
\$EXCMD	001	0001	0518	
\$EXFTR	001	043B	0700	0705 1115 1121
\$FCIND	001	0010	0596	
\$FDIND	001	0040	0603	
\$FEARR	001	0004	0411	
\$FEMAP	001	0588	0797	0798
\$FILIB	001	03DA	0647	0648
\$FITIN	001	0010	0572	
\$FUIND	001	0020	0601	
\$GUFIO	001	0583	0794	0795
\$GUFIR	001	0008	0446	
\$HISTE	001	042E	0697	0698
\$HIST1	001	0435	0698	0699 1350*
\$HRDER	001	0020	0542	1361
\$INDR1	001	03D4	0558	0584
\$INDR2	001	03D5	0584	0609 1351*
\$INDR3	001	03D6	0609	0636 1401
\$INLNO	001	03CF	0476	0478 0490 0497
\$INRPT	001	0020	0454	
\$IOIND	001	03D2	0525	0551 1361* 1382
\$IOPGS	001	0010	0665	
\$IOYES	001	0002	0440	
\$IPLDV	001	05FF	0801	0804
\$IRKEY	001	0020	0664	
\$KEYBD	001	03E1	0670	0675
\$KEYCD	001	03C3	0434	0468
\$KEYDT	001	0040	0578	
\$KE090	001	00DE	0414	
\$KE130	001	01D5	0415	
\$KYBSY	001	0010	0451	
\$LDRTN	001	0571	0789	
\$LEVEL	001	03DF	0659	0661
\$LIST	001	0002	0613	1401
\$LMRGN	001	03C1	0429	0431
\$LNPTR	001	0080	0548	
\$LOADB	001	054A	0773	
\$LOADR	001	051A	0766	0769
\$LPRIO	001	03EA	0683	
\$LPROS	001	03E5	0678	0680
\$LPRP3	001	03E4	0677	0678
\$MOUNT	001	0020	0627	
\$MPDWN	001	0001	0527	
\$NEXTB	001	03E6	0680	0681
\$NEXTL	001	03E7	0681	0682
\$NOENB	001	0008	0619	
\$NOLST	001	0004	0443	
\$NUCBS	001	03C0	0426	0427
\$NWRKF	001	0080	0632	
\$NWRKR	001	0040	0629	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$PASWD	001	042D	0696	0697
\$PAUSD	001	04BA	0750	0752
\$PAUSE	001	0002	0520	
\$PGMDT	001	0020	0575	
\$PGMST	001	0010	0539	
\$PKERT	001	0419	0694	0696
\$PLST1	001	0454	0715	0716 1216*
\$PLST2	001	045B	0716	0717 1215
\$PLST3	001	0462	0717	0718 1215*
\$PRDEV	001	044B	0712	0714
\$PRESN	001	0002	0563	
\$PROCI	001	0001	0560	
\$PRPOS	001	03C2	0431	0434
\$PSDBR	001	04FA	0755	
\$PSDXR	001	04F2	0754	0755
\$PSTEP	001	0004	0521	
\$PSTMT	001	0008	0522	
\$PTCH1	001	03F5	0685	0689
\$READY	001	0080	0605	
\$REORD	001	0040	0663	
\$RLOAD	001	051E	0769	0771
\$RMGRN	001	03C0	0427	0429
\$RSTR	001	04D6	0752	0754 0756 0761
\$RUNIT	001	0001	0499	
\$SFAID	001	050D	0757	
\$SPRNT	001	0465	0724	0726 1224
\$SRTRN	001	04FE	0756	0757
\$STEPT	001	0002	0500	
\$SWPCR	001	0511	0762	0764
\$TABLN	001	03CB	0471	0474
\$TFLOW	001	0008	0506	
\$TRACE	001	0004	0501	
\$TRALL	001	0010	0507	
\$TROVR	001	054E	0776	0779
\$TRUNK	001	0080	0459	
\$TRVAR	001	0020	0508	
\$UNMSK	001	048D	0737	0740
\$USRDR	001	03DC	0648	0649
\$VMDEF	001	0080	0512	
\$VOLF1	001	03FE	0691	0692
\$VOLF2	001	040E	0693	
\$VOLID	001	03F6	0689	0690 0694
\$VOLR1	001	03F6	0690	0691
\$VOLR2	001	0406	0692	0693
\$WAITF	001	057F	0792	0794
\$WFDEF	001	0040	0706	
\$WFLOK	001	0008	0569	
\$WFNME	001	0443	0705	0710
\$WSIND	001	0004	0566	
\$XIND1	001	03D0	0497	0516
\$XIND2	001	03D1	0516	0525
\$XIND3	001	03D8	0644	0647
\$XPREC	001	0040	0509	
\$XRSAB	001	03C7	0469	0471
\$ZTRAD	001	05A2	0798	
\$12K	001	0004	0653	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$16CKY	001	0008	0655	
\$16K	001	0002	0652	
\$22IMP	001	0001	0650	
#@CORS	001	0005	0960	
#@MVSD	001	0001	0968	
#@NERO	001	0003	0962	
#@OBRA	001	0002	0964	
#@PTFL	001	0006	0983	
#@PTFS	001	0001	0982	
#@VCNT	001	0002	0980	
#@VLAB	001	0001	0975	
#@VLSD	001	0001	0966	
#CNDIS	001	0001	0935	
#CNFIG	001	0005	0971	
#CORSV	001	0010	0959	
#DKEXT	001	0002	0942	
#DSPLY	001	0000	0002	
#FIGSC	001	0001	0972	
#HISCT	001	0006	0949	
#HISDX	001	0003	0944	
#HISLN	001	0008	0941	0942 1350 1350
#HISN1	001	0003	0947	
#HISN2	001	0005	0948	
#HISTC	001	0007	0951	
#HISTN	001	0009	0953	
#HISTQ	001	0000	0945	
#HISTR	001	0001	0946	
#HISTS	001	0008	0952	
#HISTV	001	000F	0954	
#HSEND	001	0007	0950	
#HSENT	001	0001	0943	
#IOSDR	001	0019	0970	
#MVSDR	001	000D	0967	
#NEROV	001	009C	0961	
#OBRAD	001	001D	0963	
#PKCNT	001	0002	0928	
#PKMRW	001	002B	0929	
#PKRDD	001	0003	0926	
#PKRTD	001	0003	0925	
#PKRTL	001	0004	0932	
#PKVRD	001	000B	0930	
#PKVWD	001	0007	0931	
#PKWTD	001	0001	0927	
#PTFDA	001	00DC	0981	
#RDWTL	001	0004	0933	
#SDRDK	001	0011	0969	
#VLSDR	001	000C	0965	
#VLTBE	001	0008	0920	
#VOLF1	001	0009	0973	
#VOLNG	001	0006	0918	0920 0942
#VOLOC	001	0005	0919	
#VOLR1	001	0008	0974	
#VTCF1	001	0025	0977	
#VTCF2	001	0027	0979	
#VTCR1	001	0024	0976	
#VTCR2	001	0026	0978	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES												VER 15, MOD 00	03/06/22	PAGE	23
@ALTFL	001	0001	0252																
@ARR	001	0008	0017	1114	1205*	1206	1207*	1208	1285	1374									
@ASIGN	001	007C	0072																
@ASTER	001	005C	0070																
@BCRDL	001	0050	0089																
@BE	001	0081	0044																
@BF	001	0090	0053																
@BH	001	0084	0042																
@BKSPC	001	0010	0349	1233															
@BL	001	0082	0043																
@BLANK	001	0040	0066	1294	1334	1416													
@BM	001	0082	0055																
@BNE	001	0001	0047																
@BNH	001	0004	0045																
@BNL	001	0002	0046																
@BNM	001	0002	0058																
@BNOL	001	0020	0051																
@BNOZ	001	0008	0050																
@BNP	001	0004	0057																
@BNZ	001	0001	0059																
@BOL	001	00A0	0049																
@BOZ	001	0088	0048																
@BP	001	0084	0054																
@BR	001	0001	0014	1109	1111	1112*	1113	1114	1117	1121	1124*	1135	1137	1138	1139				
				1140	1141	1142	1143	1144	1145	1146	1148	1150	1151	1152	1153				
				1154	1158	1159	1160	1161	1162	1164	1194	1200	1202*	1204	1205				
				1206	1207	1208	1210	1211	1214	1216	1220	1223	1227	1229	1231				
				1233	1235	1235	1236	1239*	1283	1285	1286	1288	1289	1291	1292				
				1292	1293	1297	1301	1303	1304	1308	1309	1309	1311	1311	1312				
				1314	1314	1316	1316	1317	1318	1318	1319	1322	1322	1323	1324				
				1328	1329	1330	1332	1332	1333	1335	1336	1339	1340	1342	1342				
				1345	1348	1349	1350	1354	1354	1355	1355	1360	1362	1372	1376				
				1378*	1385	1386	1387	1388	1389	1392	1394	1397	1399	1404	1406				
				1410	1412	1413	1413	1414	1414	1415	1418	1418	1419	1422	1424				
				1427*															
@BT	001	0010	0052																
@BZ	001	0081	0056																
@BZ37B	001	00F2	0362																
@B1	001	0001	0064																
@CADDR	001	0002	0143	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1150	1151				
				1152	1153	1154	1158	1159	1160	1161	1162	1235	1309	1311	1316				
				1318	1322	1336	1340	1413	1414										
@CARDL	001	0060	0088	0831															
@CC37B	001	0000	0358																
@CD37B	001	00F0	0376																
@CHARA	001	00C1	0073																
@CHARF	001	00C6	0074																
@CHARR	001	00D9	0075																

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SYMBOL	LEN	VALUE	DEFN	REFERENCES								VER 15,	MOD 00	03/06/22	PAGE 24
@CKY08	001	0008	0317												
@CKY09	001	0009	0318												
@CKY10	001	000A	0319												
@CKY11	001	000B	0320												
@CKY12	001	000C	0321	1268	1271	1410	1424								
@CKY13	001	000D	0322	1272	1406										
@CKY14	001	000E	0323	1273	1399										
@CKY15	001	000F	0324	1274	1394										
@CKY16	001	0010	0325	1275	1389										
@CLOFF	001	0010	0095												
@CLON	001	0011	0094												
@CMLON	001	0001	0328	1385*	1386*	1387*	1388*								
@CMOFF	001	0000	0327	1392*	1397*	1404*									
@COMMA	001	006B	0067												
@CPLUS	001	004E	0080												
@CP37B	001	0004	0389												
@CRERR	001	0090	0344	1217	1358										
@CRPRY	001	0004	0348												
@CRTDS	001	0092	0341	1212	1246	1348	1353								
@CRTQ	001	0090	0343	1120	1211*	1349	1352								
@CURSR	001	0040	0345	1237	1287	1296	1321	1423							
@DADDR	001	0002	0141												
@DBFR1	001	0004	0130												
@DBFR2	001	0005	0131												
@DBUSY	001	0002	0246												
@DCALK	001	0001	0082												
@DCBCY	001	0009	0116												
@DCBT1	001	0050	0118												
@DCFLN	001	0004	0230												
@DCNT	001	0003	0129												
@DCRID	001	0001	0244												
@DCST1	001	0040	0117												
@DCTRL	001	0000	0126												
@DCTRW	001	0000	0243												
@DCWID	001	0001	0240												
@DCYL	001	0001	0127												
@DCYMV	001	0001	0231												
@DD2	001	0003	0031												
@DEFLG	001	0002	0253												
@DERCE	001	0020	0283												
@DERD2	001	0008	0275												
@DEREQ	001	0010	0274												
@DERIN	001	0040	0272												
@DERMA	001	0020	0273												
@DERNR	001	0004	0276				</								

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@DOLAR	001	005B	0069	
@DOP2	001	0004	0029	1309* 1336* 1340*
@DPLNG	001	0006	0133	1215 1216 1216
@DPOS	001	0000	0134	
@DPUT	001	0002	0136	
@DREAD	001	0001	0237	
@DSAD	001	0002	0128	
@DSBCY	001	0004	0107	
@DSBSY	001	0092	0342	1117 1210
@DSCS1	001	0000	0108	
@DSEEK	001	0000	0236	
@DSIVF	001	0003	0139	
@DSPIN	001	0002	0132	
@DTRSZ	001	0018	0086	
@DUNSF	001	0080	0279	
@DVBCY	001	0007	0109	
@DVERY	001	0003	0242	
@DVRFY	001	0031	0137	
@DVST1	001	0002	0248	
@DVST2	001	0003	0249	
@DWAIT	001	00FF	0138	
@DWBCY	001	0005	0104	
@DWBIT	001	0002	0238	
@DWSIZ	001	00C0	0106	
@DWTB1	001	0003	0105	
@DZERO	001	00F0	0065	
@D1	001	0002	0027	1121*
@EOF	001	001C	0078	
@EOFTC	001	0075	0163	
@EOS	001	001E	0077	
@ER37B	001	00F0	0363	
@FDDBC	001	0000	0196	
@FDE1	001	000C	0201	
@FDFNA	001	000B	0199	
@FDHLN	001	0002	0209	
@FDLNC	001	0002	0194	
@FDNSC	001	0003	0211	
@FDSD	001	0000	0207	
@FLACE	001	0009	0198	
@FLDBC	001	0001	0197	
@FLDIN	001	0012	0335	
@FLENT	001	0004	0202	
@FLFNA	001	0002	0200	
@FLHLN	001	0002	0210	
@FLLNC	001	0002	0195	
@FLNSC	001	0001	0212	
@FLSD	001	0001	0208	
@HDRLN	001	0007	0093	0859
@HSTAD	001	0009	0259	
@HSTEN	001	0007	0258	
@HSTPE	001	0006	0257	
@HSTQR	001	0001	0255	
@HSTSN	001	0005	0256	
@HSTVI	001	000F	0260	
@IAR	001	0010	0018	
@ID37B	001	0040	0399	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@INDEX	001	0001	0157	0158
@INST3	001	0003	0033	
@INST4	001	0004	0034	
@INST5	001	0005	0035	
@INST6	001	0006	0036	
@IP37B	001	00C0	0398	
@I1IAR	001	00C0	0021	
@KCMDK	001	0020	0309	
@KELOK	001	001B	0308	
@KENAB	001	001E	0306	
@KEXIT	001	001F	0307	
@KEYBD	001	0010	0326	1385* 1386* 1387* 1388* 1392* 1397* 1404*
@KFUNK	001	0010	0329	
@KHARD	001	0011	0334	
@KLEAR	001	000D	0330	
@LINSZ	001	00F4	0085	0833
@LO37B	001	00F0	0367	
@MAPEN	001	0005	0090	
@MINCR	001	2000	0084	
@MINUS	001	0060	0081	
@NOP	001	0080	0041	1197
@NORFL	001	0000	0254	
@NTRDY	001	00A0	0391	
@NUMBR	001	007B	0071	
@OPD2	001	0004	0030	
@OP1	001	0003	0028	1113* 1114* 1200* 1204* 1206* 1208* 1285* 1374* 1376* 1380*
@OP2	001	0005	0032	
@OVRUN	001	0004	0284	
@PBUSY	001	00E2	0296	
@PCAR	001	00E6	0293	
@PCNT	001	0003	0228	
@PCTRL	001	0000	0150	1220 1227 1229 1233 1303
@PCYL	001	0001	0226	
@PC37B	001	00F2	0383	
@PDAR	001	00E4	0292	
@PDATA	001	0003	0152	1214 1214* 1309 1318* 1336
@PD37B	001	0080	0397	
@PERR	001	00E0	0299	
@PFLAG	001	0000	0225	
@PFORM	001	00E1	0297	
@PGCSZ	001	0020	0083	0084
@PLITE	001	00E2	0298	
@PLNGH	001	0004	0289	1214
@PMGCK	001	0020	0300	
@PN37B	001	00F0	0382	
@PPLNG	001	0004	0149	
@PRCNT	001	0001	0151	1314* 1342*
@PRETR	001	00C0	0155	
@PRINT	001	0040	0153	0155 1227
@PRITY	001	0080	0333	
@PSAD	001	0002	0227	
@PSIOQ	001	00E0	0295	
@PSIOR	001	0000	0294	
@PSNSQ	001	00E2	0301	
@PSR	001	0004	0016	
@PWAIT	001	00FF	0159	1303

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@P1IAR	001	0020	0019	
@P2IAR	001	0040	0020	
@Q	001	0001	0025	1197* 1223*
@RD37B	001	00F1	0377	
@REGL	001	0002	0013	1349*
@RETRN	001	0080	0154	0155 1229
@RLDWN	001	004F	0160	1220
@RTCNT	001	0003	0291	
@RTRNC	001	0080	0162	
@RT37B	001	0005	0390	
@SBLN	001	0005	0171	
@SBLNL	001	0002	0185	
@SCTSΖ	001	0100	0101	
@SDFLN	001	0007	0091	
@SDF0	001	0000	0167	
@SDF1	001	0001	0168	
@SDF2	001	0002	0169	
@SDF3	001	0003	0170	
@SECCY	001	0030	0087	
@SIST	001	0001	0182	
@SKCTL	001	0000	0241	
@SLASH	001	0061	0068	
@SLAST	001	0002	0184	
@SMIDL	001	0003	0183	
@SNSB0	001	0000	0265	
@SNSB1	001	0001	0266	
@SNSB2	001	0002	0267	
@SNSB3	001	0003	0268	
@SNULL	001	0080	0174	
@SN37B	001	00F2	0371	
@SONLY	001	0000	0181	
@SPINA	001	00A0	0250	
@SPINB	001	00B0	0251	
@STEXT	001	0007	0173	
@STYPE	001	0006	0172	
@SYCNT	001	0002	0290	
@TBCNT	001	0000	0161	
@TBLEF	001	0010	0156	0158
@TBLIX	001	0011	0158	
@TJ37B	001	0040	0388	
@TYPAM	001	0002	0332	
@TYPO	001	001C	0331	
@UCB	001	0087	0040	1222 1223
@UPARW	001	005A	0079	
@VADDR	001	0002	0142	
@VENTA	001	0056	0114	
@VMDDV	001	00FE	0115	
@VMFD1	001	0000	0110	
@VMFD2	001	0001	0111	
@VMRS3	001	0002	0113	
@VMTRL	001	0001	0112	
@VOLID	001	0006	0092	
@VQ	001	0001	0026	
@WA37B	001	00FF	0396	
@WSFIT	001	0500	0102	
@WSTBL	001	0503	0103	

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S Y M B O L	L E N	V A L U E	D E F N	R E F E R E N C E S								V E R 1 5 , M O D 0 0 0 3 / 0 6 / 2 2 P A G E 2 8					
@XR	001	0002	0015	1113 1145 1159	1123* 1146 1160	1135* 1148* 1161	1136 1149 1162	1137 1150 1204	1138 1151 1213*	1139 1152 1214	1140 1153 1236*	1141 1154 1237	1142 1156* 1238	1143 1157 1240*	1144 1158 1286*		
				1287 1321 1417	1288* 1329* 1417	1290 1330* 1422*	1290 1331 1423	1291* 1331 1426*	1294 1334 	1295 1335 	1295 1338 	1296 1339* 	1297 1380 	1308* 1415* 	1310 1416 		
@ZERO	001	0000	0063	1238	1298	1412											
@4K	001	0010	0350	1115	1130												
DSBASE	004	2924	1244	1194	1202	1283	1301	1372	1378								
DSBFEN	001	2FC1	1448	1264	1449												
DSBUFA	002	2997	1262	1211	1263	1288	1413										
DSCNTC	002	299E	1269	1354*	1355*												
DSCNTR	001	298D	1256	1289*	1292*	1328*	1332*										
DSCPOS	002	298C	1254	1235*	1236	1255	1286	1297*	1308	1311*	1316	1322	1422				
DSC001	002	2985	1250	1205	1207	1235	1292	1311	1312	1314	1318	1332	1339	1340	1342		
				1355	1418												
DSC064	002	298F	1257	1291													
DSDOWN	001	2A50	1347	1217													
DSD100	004	2A69	1355	1356													
DSD150	004	2A78	1361	1358													
DSEMDB	002	2999	1264	1265	1316	1322											
DSENSE	002	2981	1248	1348*	1349*												
DSHIST	001	297E	1245	1350													
DSINCT	001	29A6	1277	1412*	1418*	1419											
DSINDX	001	29A9	1284	1231	1317												
DSINIT	001	29A5	1276	1413*	1414*	1415											
DSI010	004	29B8	1290	1293													
DSI050	004	29D7	1299	1285*													
DSLBSL	001	2800	1110	1109	1128	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146		
				1148	1150	1151	1152	1153	1154	1158	1159	1160	1161	1162	1164		
				1195													
DSLBSL	001	0100	1107	1132	1149												
DSLBSX	001	3900	1128	1129													
DSL4K	001	2835	1130														
DSLFTTR	002	2837	1131	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1150	1151		
				1152	1153	1154	1158	1159	1160	1161	1162						
DSLINA	001	2D41	1438	1439													
DSLINB	001	2D01	1437	1438													
DSLINC	001	2CC1	1436	1437													
DSLIND	001	2C81	1435	1436													
DSLINF	001	2C41	1434	1435													
DSLINF	001	2C01	1433	1262	1434												
DSLIN1	001	2F81	1447	1254	1448												
DSLIN2	001	2F41	1446	1266	1447												
DSLIN3	001	2F01	1445	1446													
DSLIN4	001	2EC1	1444	1445													
DSLIN5	001	2E81	1443	1444													
DSLIN6	001	2E41	1442	1443													
DSLIN7	001	2E01	1441	1442													
DSLIN8	001	2DC1	1440	1441													
DSLIN9	001	2D81	1439	1440													

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
DSL053	005	281E	1121	1118
DSL055	004	2823	1122	1121*
DSL090	004	2827	1123	1113*
DSL100	004	282F	1125	1114*
DSL200	001	283A	1134	1116
DSL256	002	2839	1132	1148
DSN064	002	2991	1258	1330
DSPADD	002	2993	1259	1260
DSPCMD	001	2B00	1373	1156 1157
DSPICT	001	299F	1270	1354
DSPK12	001	29A0	1271	
DSPK13	001	29A1	1272	1385
DSPK14	001	29A2	1273	1386 1404
DSPK15	001	29A3	1274	1387 1397
DSPK16	001	29A4	1275	1388 1392
DSPLYA	002	2834	1129	1135
DSPLYN	001	2904	1199	1259
DSPPRO	002	29A8	1280	1414
DSPRNT	002	2995	1261	
DSPSNS	001	299C	1268	1389 1394 1399 1406 1410 1424*
DSPYMP	001	2900	1196	1136 1149
DSP005	001	0005	1281	1419
DSP010	003	2B30	1394	1390
DSP020	003	2B3D	1399	1395
DSP030	003	2B51	1406	1400 1402
DSP040	003	2B5F	1410	1383 1407
DSP050	004	2B6C	1414	1420
DSP080	003	2B8B	1424	1411
DSP090	004	2B8E	1426	1380*
DSP095	004	2B92	1427	1376*
DSP100	004	2B96	1428	1374*
DSP192	001	00C0	1279	1280
DSP193	001	00C1	1278	1417
DSR005	001	2903	1198	1137*
DSR010	001	2907	1201	1138*
DSR020	001	290B	1203	1139*
DSR025	001	293A	1218	1140*
DSR030	001	294F	1226	1141*
DSR070	002	298C	1255	1142*
DSR080	002	2993	1260	1143*
DSR090	002	2997	1263	1144*
DSR100	002	2999	1265	1145*
DSR110	002	299B	1267	1146*
DSR130	001	2A36	1337	1150*
DSR140	001	2A43	1341	1151*
DSR150	001	2A4C	1344	1152*
DSR240	001	2A70	1357	1153*
DSR250	001	2A74	1359	1154*
DSR260	001	2B03	1375	1158*
DSR270	001	2B07	1377	1159*
DSR275	001	2B0B	1379	1160*
DSR280	001	2B0F	1381	1161*
DSR290	001	2B84	1421	1162*
DS0050	004	2924	1213	1206* 1210 1244
DS0052	003	293E	1220	1219 1360
DS0053	003	2944	1222	1197* 1223*

[illegible]

START ADDRESS	CATEGORY	NAME AND ENTRY	CODE LENGTH HEXADECIMAL	DECIMAL
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0000	0	#DSPLY	2C01	11265
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OL100 I THE TOTAL CORE USED BY #DSPLY IS 11265 DECIMAL.
OL101 I THE START CONTROL ADDRESS OF THIS MODULE IS 0000.
OL104 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 45
NAME-#DSPLY,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-O

28 1154* 1221
DS0260 003 2A1A 1330 1158* 1333
DS0270 005 2A30 1338 1159* 1340* 1343
DS0275 001 2B0B 1379 1160*
DS0280 001 2B0F 1381 1161*
DS0290 UNDEFINED SYMBOL 1162*

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 21

050D	760+\$SFAID EQU	\$SRTRN+15	ADDR OF RETURN IF FE AID REQUEST * IF THE ABOVE TWO ADDRESSES ARE * EQUAL, RETURN TO \$RSTR WILL BE * BE FROM THE FE AID PROGRAM
050E	764+\$CSDPL EQU	\$RSTR+X'38'	ADDR OF LEFT BYTE OF SAVE/RSTR D
0511	765+\$SWPCR EQU	\$CSDPL+3	ADDR OF DKADDR, COUNT FOR CORE * SAVE AREA
0517	767+\$EXADR EQU	\$SWPCR+6	ADDRR OF DK ADDR, COUNT OF EXEC * TIME MESSAGE PROGRAM
051A	769+\$LOADR EQU	\$EXADR+3	ADDR OF ENTRY TO BLAST LOAD * PROGRAM NOT RESIDING ON CYL 4 * RETURN IS TO CALLING PROGRAM
051E	772+\$RLOAD EQU	\$LOADR+4	ADDR OF ENTRY TO BLAST LOAD * PROGRAM NOT RESIDING ON CYL 4
0522	774+\$BLOAD EQU	\$RLOAD+4	ADDR OF ENTRY TO BLAST LOAD * PROGRAM RESIDING ON CYL 4
054A	776+\$LOADB EQU	\$BLOAD+X'28'	ADDR OF SPECIAL ENTRY TO * NBLOAD FOR SFLOAD/SFFIND * AND FZPINV

@FXDEQ - FIXED ADDRESSES FOR SYSTEM NUCLEUS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 20
		054E	779+	\$TROVR EQU	\$BLOAD+X'2C'	ADDR OF FE TRACE INDR
			780+*			* @NOP - NO TRACE PERFORMED
			781+*			* @UCB - TRACE PERFORMED
		0550	782+	\$BLRTN EQU	\$TROVR+2	ADDR OF RETURN POINT FROM ZTRACE
		0569	783+	\$BLNOE EQU	\$BLRTN+X'19'	ADDR OF NO EXECUTE INDR-NBLOAD
			784+*			* @NOP - CALLING PGM RETURNED TO
			785+*			* @UCB - LOADED PROGRAM EXECUTED
			786+*			* ENTRY TO \$LOADR SETS THE ABOVE
			787+*			* INDR TO @NOP. IF THE CALLING
			788+*			* SETS THE INDR TO @NOP BEFORE
			789+*			* CALLING \$BLOAD, RETURN WILL BE
			790+*			* MADE UPON COMPLETION OF THE
			791+*			* ABSOLUE LOAD
		0571	792+	\$LDRTN EQU	\$BLOAD+X'4F'	ADDR OF THE RETURN ADDR IN NBLOA
		0579	793+	\$BLDPL EQU	\$BLOAD+X'57'	ADDR OF LEFT BYTE OF \$BLOAD'S
			794+*			* DPL (DPL OF LAST PGM LOADED)
		057F	795+	\$WAITF EQU	\$BLDPL+6	ADDR OF LEFT BYTE OF DISK
			796+*			* WAIT AND CHECK ERRORS DPL
		0583	797+	\$GUFIO EQU	\$WAITF+4	ADDR OF DK ADDR, COUNT OF GUFUDI
		0587	798+	\$BSADR EQU	\$GUFIO+4	ADDR OF DADDR RELOCATION FACTOR
			799+*			* FOR PGMS NOT RESIDING ON CYL 6
		0588	800+	\$FEMAP EQU	\$BSADR+1	ADDR OF START OF CORE MAP
		05A2	801+	\$ZTRAD EQU	\$FEMAP+X'1A'	ADDR OF ZTRACE DADDR
05FF			803+	ORG	X'05FF'	
		05FF	804+	\$IPLDV EQU	*	ADDR OF IPL INDR
			805+*			* X'00' - IPL WAS FROM R1
			806+*			* X'01' - IPL WAS FROM F1
		0600	807+	\$ENDNU EQU	\$IPLDV+1	ADDR OF THE FIRST BYTE
			808+*			* FOLLOWING SYSNUC
			809+*		END OF FIXED ADDRESSES SYSTEM NUCLEUS EQUATES	
			810+		PRINT ON	
			811 *	@CAN	EXP-Y	
			813+		PRINT ON	

@CANEQ - COMMON CORE LOCATIONS OUTSIDE NUCLEUS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 21
			815+	*****	
			816+	INPUT LINE HEADER	*
			817+	*****	
	0600		818+\$\$ILHD EQU	\$ENDNU	FIRST BYTE OF INPUT LINE HEADER
			819+	*	
	0601		820+\$\$ILEN EQU	\$\$ILHD+1	SECOND BYTE OF SDF LENGTH FIELD
			821+	*	
	0602		822+\$\$UPAR EQU	\$\$ILEN+1	UP ARROW LOCATION IN LAST LINE
			823+	*	
	0603		824+\$\$CKEY EQU	\$\$UPAR+1	CMD KEY FUNCTION CODE
			825+	*	* EXECUTABLE CMD KEYS
	0605		826+\$\$BNLN EQU	\$\$ILEN+4	SECOND BYTE OF BINARY LINE NO.
			827+	*	
	0606		828+\$\$TPCD EQU	\$\$BNLN+1	TYPE CODE FIELD
			830+	*****	
			831+	INPUT LINE TEXT	*
			832+	*****	
	0607		833+\$\$INLN EQU	\$\$TPCD+1	FIRST BYTE CHAR OF INPUT LINE
			834+	*	
	0666		835+\$\$CDND EQU	\$\$INLN+@CARDL-1	LAST CHAR OF CARD INPUT
			836+	*	
	06FA		837+\$\$INND EQU	\$\$INLN+@LINSZ-1	LAST CHAR OF INPUT LINE BUFFER
			839+	*****	
			840+	KEYBOARD ROUTINE LOCATIONS AND MASKS	*
			841+	*****	
	0890		842+\$\$PRES EQU	\$ENDNU+X'0290'	ENABLE KEYBOARD ENTRY TO DEPRES
			843+	*	
	09E1		844+\$\$KBDT EQU	\$\$PRES+X'0151'	DATA BYTE FROM KEYBOARD
	0081		845+\$\$\$STD EQU	B'10000001'	CLI MASK FOR START KEY DATA
	0091		846+\$\$\$EPL EQU	B'10010001'	CLI MASK FOR ENTER PLUS KEY
			847+	*	
	09E2		848+\$\$KBSN EQU	\$\$KBDT+1	TYPE BYTE FROM KEYBOARD
	0040		849+\$\$\$DAT EQU	B'01000000'	TBM MASK FOR DATA KEY
	0020		850+\$\$\$CMD EQU	B'00100000'	TBM MASK FOR COMMAND KEY
	0010		851+\$\$\$FUN EQU	B'00010000'	TBM MASK FOR FUNCTION KEY
			852+	*	
	09EB		853+\$\$LPOS EQU	\$\$KBSN+9	PRINT HEAD POSITION ADDR
	0AFE		854+\$\$EOSA EQU	\$\$PRES+X'026E'	LOCATION OF EOS ADDR
	0B44		855+\$\$COFF EQU	\$\$PRES+X'02B4'	ENTRY TO TURN OFF CMD LIGHTS
	0B3D		856+\$\$CKFF EQU	\$\$PRES+X'02AD'	ENTRY TO TURN OFF CMD LIGHTS 1-1
	0BBF		857+\$\$DATB EQU	\$\$PRES+X'032F'	ADDR OF DATA TABLE TYPE INDR IN
			858+	*	* DEPRES (VALUE: 1-9)
			860+	*****	
			861+	MATRIX PRINTER ROUTINE ENTRY POINT	*
			862+	*****	
	0707		863+\$\$PRNT EQU	\$ENDNU+X'0100'+@HDRLN	DPRINT ENTRY
	0782		864+\$\$PRTN EQU	\$\$PRNT+X'007B'	ADDR OF CARRIER RETURN TEST IN
			865+	*	* DPRINT. MASKS FOLLOE
			866+	*	* @NOP - NO TEST MADE
			867+	*	* @BNL - TEST WILL BE MADE
	07CE		868+\$\$PSIO EQU	\$\$PRNT+X'00C7'	ADDR OF SIO CTRL IN DPRINT
	07E9		869+\$\$PCNT EQU	\$\$PRNT+X'00E2'	ADDR OF PPL CNT IN DPRINT

@CANEQ - COMMON CORE LOCATIONS OUTSIDE NUCLEUS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 22
			871+	*****	*****	
			872+	*	CARD READER LOCATIONS	*
			873+	*****	*****	
	0890		874+	\$\$\$CDRD EQU	\$\$PRES	ENTRY POINT TO READ CARDS
			875+	*		
	08C0		876+	\$\$\$CDBS EQU	\$\$\$CDRD+X'0030'	ENTRY POINT TO WAIT FOR READ
			878+	*****	*****	
			879+	*	CRT OUTPUT ROUTINE LOCATIONS	*
			880+	*****	*****	
	2000		881+	\$\$\$PYMP EQU	\$\$ZERO+X'2000'	ENTRY POINT TO CRT PLUS PRINT
			882+	*		
	2004		883+	\$\$\$PLYN EQU	\$\$\$PYMP+4	ENTRY POINT TO CRT ONLY
			884+	*		
	209C		885+	\$\$\$CSNS EQU	\$\$\$PYMP+X'009C'	LOCATION OF SENSE BYTE IN
			886+	*		* DSPLYN
	2143		887+	\$\$\$PRFL EQU	\$\$\$PYMP+X'0143'	ENTRY POINT FOR PRINTER FAILURE
			888+	*		
	2200		889+	\$\$\$PYCD EQU	\$\$\$PYMP+X'0200'	ENTRY POINT FOR COMMAND KEYS
			890+	*		* OR CLEAR CRT FUNCTION
			892+	*****	*****	
			893+	*	MISCELLANEOUS LOCATIONS	*
			894+	*****	*****	
	1C00		895+	\$\$\$ERSK EQU	X'1C00'	START ADDR OF ERROR CODE STACK
	00A0		896+	\$\$\$NLN EQU	X'00A0'	HIGH ORDER BYTE OF LINE NUMBER
			897+	*		* IN STACK IF NO. NOT DESIRED
	1C00		898+	\$\$\$SLIB EQU	X'1C00'	SECONDARY LINE INPUT BUFFER
	06FF		899+	\$\$\$XIND EQU	\$\$ENDNU+X'00FF'	EXEC INDR PASS AREA
	0080		900+	\$\$\$ERN EQU	B'10000000'	RUN FUNC SAVED FILE INDR MASK
	1E00		901+	\$\$\$WSPB EQU	X'1E00'	LOCATION OF BAGETC BUFFER
	06FF		902+	\$\$\$FLIB EQU	\$\$\$XIND	FILE LIB ADDR PASS AREA
	1D00		903+	\$\$\$FITS EQU	X'1D00'	LOCATION OF FIT
			905+	*****	*****	
			906+	*	KEYWORD COMMAND LOAD ADDRESSES	*
			907+	*****	*****	
	0600		908+	\$\$\$KLD1 EQU	\$\$ENDNU	PROGRAMS THAT LOAD BEHIND
			909+	*		* SYSNUC
	0700		910+	\$\$\$KLD2 EQU	\$\$ENDNU+X'0100'	PROGRAMS THAT LOAD BEHIND
			911+	*		* THE INPUT LINE BUFFER
	0C00		912+	\$\$\$KLD3 EQU	\$\$ENDNU+X'0600'	STANDARD LOAD ADDRESS BEHIND
			913+	*		* I/O ROUTINES
			914+	*	END OF COMMON CORE LOCATIONS EQUATES	
			915+		PRINT ON	
			916	*	@CY0 EXP-Y	
			918+		PRINT ON	

@CY0EQ - CYLINDER ZERO EQUATES

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 23
		920+	*****			
		921+	*	DISK TABLE EQUATES		*
		922+	*****			
	0006	923+	#VOLNG	EQU	6	LENGTH OF VOL ID
	0005	924+	#VOLOC	EQU	5	DISPLACEMENT OF VOL ID ON SCTR
	0008	925+	#VLTBE	EQU	#VOLNG+2	LENGTH OF VOLID TABLE ENTRY
		927+	*****			
		928+	*	SDS (ERROR LOG) EQUATES		*
		929+	*****			
	0003	930+	#PKRTD	EQU	3	DISP TO END OF PK ERR/RATE ENTRY
	0003	931+	#PKRDD	EQU	3	DISP TO RESPECTIVE READ COUNTER
	0001	932+	#PKWTD	EQU	1	DISP TO RESPECTIVE WRITE COUNTER
	0002	933+	#PKCNT	EQU	2	LENGTH OF IN-CORE COUNTERS
	002B	934+	#PKMRW	EQU	43	DISP TO MASTER RD/WT COUNTERS
	000B	935+	#PKVRD	EQU	11	DISP TO VOLUME RD COUNTERS IN SD
	0007	936+	#PKVWD	EQU	7	DISP TO VOLUME WT COUNTERS IN SD
	0004	937+	#PKRTL	EQU	4	LENGTH PACK ERROR RATE ENTRY
	0004	938+	#RDWTL	EQU	4	LENGTH RD/WT ERROR RATE COUNTER
	0001	940+	#CNDIS	EQU	1	SECTOR DISPLACEMENT OF
		941+	*			* CONFIGURATION RECORD
		943+	*****			
		944+	*	ERROR HISTORY TABLE EQUATES		*
		945+	*****			
	0008	946+	#HISLN	EQU	8	LENGTH OF HISTORY TABLE ENTRY
	0002	947+	#DKEXT	EQU	#HISLN-#VOLNG	HIST LOG EXTENSION FOR DISK ERRO
	0001	948+	#HSENT	EQU	1	DISP OF DISP TO NEXT OBR ENTRY
	0003	949+	#HISDX	EQU	3	DISP OF DISP PAST LAST ENTRY
	0000	950+	#HISTQ	EQU	0	DISP OF SIO Q BYTE
	0001	951+	#HISTR	EQU	1	DISP OF SIO CNTL BYTE
	0003	952+	#HISN1	EQU	3	DISP OF PRIMARY SENSE REG
	0005	953+	#HISN2	EQU	5	DISP OF SECONDARY SENSE REG
	0006	954+	#HISCT	EQU	6	DISP OF RETRY COUNT
	0007	955+	#HSEND	EQU	7	DISP OF END OF 1ST ENTRY
	0007	956+	#HISTC	EQU	7	DISP OF DCF F-BYTE
	0008	957+	#HISTS	EQU	8	DISP OF DCF S-BYTE
	0009	958+	#HISTN	EQU	9	DISP OF DCF N-BYTE
	000F	959+	#HISTV	EQU	15	DISP OF DISK VOL-ID
		961+	*****			
		962+	*	CYLINDER ZERO DISK ADDRESSES		*
		963+	*****			
	0010	964+	#CORSV	EQU	X'0010'	DADDR OF TEMP CORE SAVE AREA
	0005	965+	#@CORS	EQU	5	SCTR COUNT TEMP CORE SAVE AREA
	009C	966+	#NEROV	EQU	X'009C'	DADDR OF NERLOG OVERLAY
	0003	967+	#@NERO	EQU	3	SCTR COUNT NERLOG OVERLAY
	001D	968+	#OBRAD	EQU	X'001D'	DADDR OF OBR TABLE
	0002	969+	#@OBRA	EQU	2	SCTR COUNT OF OBR
	000C	970+	#VLSDR	EQU	X'000C'	DADDR OF VOL STATISTICS SCTR R1
	0001	971+	#@VLSD	EQU	1	SCTR COUNT OF VOL STATISTICS
	000D	972+	#MVSDR	EQU	X'000D'	DADDR OF MASTER VOL STAT SCTR
	0001	973+	#@MVSD	EQU	1	SCTR COUNT OF MASTER VOL STAT
	0011	974+	#SDRDK	EQU	X'0011'	DADDR OF DISK SDR SCTR
	0019	975+	#IOSDR	EQU	X'0019'	DADDR OF NON-DISK SDR SCTR

@CY0EQ - CYLINDER ZERO EQUATES

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 24
		0005	976+	#CNFIG EQU	X'0005'	DADDR OF CONFIG RECORD
		0001	977+	#FIGSC EQU	1	SCTR COUNT OF CONFIG RECORD
		0009	978+	#VOLF1 EQU	X'0009'	DADDR OF VOLUME LABEL (F1)
		0008	979+	#VOLR1 EQU	X'0008'	DADDR OF VOLUME LABEL (R1)
		0001	980+	#@VLAB EQU	1	SCTR COUNT OF VOLUME LABEL
		0024	981+	#VTCR1 EQU	X'0024'	DADDR OF R1 VTOC
		0025	982+	#VTCF1 EQU	X'0025'	DADDR OF F1 VTOC
		0026	983+	#VTCR2 EQU	X'0026'	DADDR OF R2 VTOC
		0027	984+	#VTCF2 EQU	X'0027'	DADDR OF F2 VTOC
		0002	985+	#@VCNT EQU	2	SCTR COUNT OF VTOC
		00DC	986+	#PTFDA EQU	X'00DC'	DADDR OF PTF LOG
		0001	987+	#@PTFS EQU	1	SCTR COUNT FOR PTF LOG
		0006	988+	#@PTFL EQU	6	LENGTH OF ENTRY IN PTF LOG
		989+	*		END OF CYLINDER ZERO EQUATES	
		990+			PRINT ON	
		991	*	@HLT	EXP-Y	
		993+			PRINT ON	

@HLTEQ - HALT INDICATOR EQUATES

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 25
		995+	*****			
		996+	*	THESE EQUATES, WHEN USED WITH THE HPL INSTRUCTION AS A TWO	*	
		997+	*	ADDRESS CONSTANT REPLACING THE Q AND R FIELDS, WILL CAUSE THE	*	
		998+	*	CORRESPONDING HALT INDICATORS TO BE LIT.	*	
		999+	*****			
		2040	1001+	@HKBER EQU	X'2040'	KEYBOARD PARITY ERROR SOFT HALT
			1002+	*		* CODE ' B 1 '
		0070	1003+	@HPRER EQU	X'0070'	MATRIX PRINTER ERROR SOFT HALT
			1004+	*		* CODE ' 123 '
		1040	1005+	@HDTRD EQU	X'1040'	DATA RECORDER ERROR SOFT HALT
			1006+	*		* CODE ' C 1 '
		1010	1007+	@HDTRJ EQU	X'1010'	DATA RECORDER TRANSPORT JAM
			1008+	*		* CODE ' C 3 '
		1008	1009+	@HDNRY EQU	X'1008'	DATA RECORDER NOT READY
			1010+	*		* CODE ' C 4 '
		087C	1011+	@HERPG EQU	X'087C'	HARD HALT AFTER ERROR MESSAGE
			1012+	*		* CODE ' D12345'
		1844	1013+	@HLOGE EQU	X'1844'	HARD DISK ERROR WHILE LOGGING
			1014+	*		* AN I/O ERROR
			1015+	*		* CODE ' CD1 5'
		1850	1016+	@HUNSF EQU	X'1850'	HARD DISK UNSAFE ERROR
			1017+	*		* CODE ' CD1 3 '
		006C	1018+	@HIPLE EQU	X'006C'	HARD HALT WHEN NO SYSTEM PGM
			1019+	*		* FILE FOUND ON IPL'D DISK
			1020+	*		* CODE ' 12 45'
		003C	1021+	@HCEPK EQU	X'003C'	HARD HALT FOR CE PACK
			1022+	*		* CODE ' 2345'
		081C	1023+	@HCOPY EQU	X'081C'	HARD HALT ON TERMINATION OF
			1024+	*		* COPY DISK FUNCTION
			1025+	*		* CODE ' D 345'
		0804	1026+	@HFEHT EQU	X'0804'	HARD HALT ON ZUTMON 'H' OPTION
			1027+	*		* CODE ' D 5'
		001C	1028+	@HCOPS EQU	X'001C'	SOFT HALT ON INTERMEDIATE COPY
			1029+	*		* DISK FUNCTION
			1030+	*		* CODE ' 345'
			1031+	*		
			1032+	***	HARD I/O ERROR HALTS	
			1033+	*		
		7840	1034+	@HDRV1 EQU	X'7840'	HARD ERROR ON DRIVE 1
			1035+	*		* CODE 'ABCD1 '
		7844	1036+	@HDRV2 EQU	X'7844'	HARD ERROR ON DRIVE 2
			1037+	*		* CODE 'ABCD1 5'
		7848	1038+	@HKBHE EQU	X'7848'	HARD KEYBOARD ERROR
			1039+	*		* CODE 'ABCD1 4 '
		784C	1040+	@HPRHE EQU	X'784C'	HARD PRINTER ERROR
			1041+	*		* CODE 'ABCD1 45'
		7854	1042+	@HDRHE EQU	X'7854'	HARD DATA RECORDER ERROR
			1043+	*		* CODE 'ABCD1 3 5'
		7858	1044+	@HCRHE EQU	X'7858'	HARD CRT ERROR
			1045+	*		* CODE 'ABCD1 34 '
			1046+	*	END OF HALT EQUATES	
			1047+	*	PRINT ON	

#DSPLY - MODULE PROLOG

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 26
		1049		*****	
		1050	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		1051	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE 120-2083	*
		1052	*		*
		1053		*****	
		1054	*	STATUS	*
		1055	*	VERSION 1 MODIFICATION 0	*
		1056	*		*
		1057	*	FUNCTION	*
		1058	*	DSPLYN IS THE IOCR USED FOR DISPLAYING PRINTER OUTPUT WHEN THE	*
		1059	*	CRT IS DESIGNATED AS THE SYSTEM PRINTER.	*
		1060	*	THE FUNCTIONS PROVIDED ARE:	*
		1061	*	* PRINT - DATA IS DISPLAYED STARTING AT THE CURRENT DISPLAY	*
		1062	*	POSITION AND CONTINUING LINE BY LINE UNTIL ALL CHARACTERS HAVE	*
		1063	*	BEEN DISPLAYED. THE CURRENT POSITION WILL ALWAYS BE ON THE	*
		1064	*	BOTTOM LINE.	*
		1065	*	* PRINT AND RETURN - SAME AS PRINT EXCEPT THAT THE NEXT POSITION	*
		1066	*	TO BE DISPLAYED WILL BE AT THE START OF THE NEXT LINE.	*
		1067	*	* RETURN - THE NEXT POSITION TO BE DISPLAYED WILL BE AT THE START	*
		1068	*	OF THE NEXT LINE.	*
		1069	*	* TAB LEFT/TAB LEFT & INDEX - THE CURSOR (NEXT PRINT POSITION)	*
		1070	*	TO BE DISPLAYED WILL BE AT THE START OF NEXT LINE	*
		1071	*	IF THE CURSOR REACHES THE LEFT POSITION OF THE STATEMENT AND	*
		1072	*	THE COUNT IS NOT ZERO, IT WILL REMAIN THERE. CHARACTERS ARE	*
		1073	*	CLEARED TO BLANKS AS THE TAB LEFT PROCEEDS.	*
		1074	*	* WAIT - TESTS CRT FOR ERRORS.	*
		1075	*	THE FOLLOWING ARE FOR CRT ONLY, WHILE THE ABOVE ARE FOR EITHER	*
		1076	*	CRT OR SYSTEM PRINTER.	*
		1077	*	* ROLL DOWN AND PRINT - THIS CAUSES THE DISPLAYED LINES TO BE	*
		1078	*	ROLLED DOWN AND THE DATA TO BE DISPLAYED ON THE TOP LINE.	*
		1079	*	A MAXIMUM OF 64-BYTE CHARACTER STRING CAN BE USED WITH THIS	*
		1080	*	FUNCTION.	*
		1081	*		*
		1082	*	ENTRY POINTS	*
		1083	*	FOR NORMAL SYSTEM PRINTER, THE CALLING SEQUENCE IS:	*
		1084	*	B \$SPRNT	*
		1085	*	DC AL2(PPL)	*
		1086	*	FOR A DIRECT CALL TO 'PRINT' ON THE CRT, THE CALLING	*
		1087	*	SEQUENCE IS:	*
		1088	*	B \$\$PLYN	*
		1089	*	DC AL2(PPL)	*
		1090	*	FOR A DIRECT CALL TO PRINT ON BOTH THE CRT AND MATRIX PRINTER,	*
		1091	*	THE CALLING SEQUENCE IS:	*
		1092	*	B \$\$PYMP	*
		1093	*	DC AL2(PPL)	*
		1094	*	TO CLEAR THE CRT SCREEN, THE CALLING SEQUENCE IS:	*
		1095	*	B \$\$PYCD	*
		1096	*	'PPL' IS THE ADDRESS OF THE PRINT PARAMETER LIST.	*
		1097	*		*
		1098	*	INPUT	*
		1099	*	INPUT IS THE ADDRESS OF THE PRINT PARAMETER LIST WHICH APPEARS	*
		1100	*	FOLLOWING THE BRANCH IN THE CALLING SEQUENCE.	*
		1101	*		*
		1102	*	OUTPUT	*
		1103	*	THE OUTPUT IS THE DISPLAYED DATA ON THE SYSTEM PRINTER(CRT),	*
		1104	*		*

#DSPLY - MODULE PROLOG

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 27
		1105	*	*EXTERNAL REFERENCES	*
		1106	*	DSPLYT - ENTRY POINT TO PRINT CRT FAILURE MESSAGE ON MATRIX	*
		1107	*	PRINTER.	*
		1108	*	\$CRTUP - ROLL UP KEY INDICATOR	*
		1109	*	SCRTDN - ROLL DOWN KEY INDICATOR	*
		1110	*	\$CRTPU - POP-UP KEY INDICATOR	*
		1111	*	\$PRDEV - INDICATOR FOR SYSTEM PRINTER DEVICE	*
		1112	*	\$CIMSR - IR MASKED INDICATOR	*
		1113	*	\$UNMSK - ENTRY TO UNMASK IR	*
		1114	*	\$HIST1 - LOCATION OF HISTORY TABLE ENTRY	*
		1115	*	\$ERCNI - LOCATION TO SAVE ERROR COUNTER DISPLACEMENT	*
		1116	*	\$\$PRNT - ENTRY TO MATRIX PRINTER IOCS	*
		1117	*	SERPND - INDICATOR FOR ERROR PENDING TO BE LOGGED	*
		1118	*	\$HRDER - INDICATOR FOR HARD ERROR	*
		1119	*		*
		1120	*	*EXITS, NORMAL	*
		1121	*	EXIT WILL BE TO THE CALLING PROGRAM.	*
		1122	*		*
		1123	*	*EXITS, ERROR	*
		1124	*	SEE ERROR PROCEDURES UNDER NOTES.	*
		1125	*		*
		1126	*	*TABLES/WORK AREAS	*
		1127	*	A 4-BYTE WORK AREA IS ALLOCATED FOR STORAGE OF THE PPL.	*
		1128	*	IT IS USED FOR REFERENCINC THE FUNCTION DESIRED.	*
		1129	*		*
		1130	*	*ATTRIBUTES	*
		1131	*	DSPLYN IS RELOCATABLE AND REUSABLE.	*
		1132	*		*
		1133	*	*CHARACTER CODE DEPENDENCY	*
		1134	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON ANY PARTICULAR	*
		1135	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER	*
		1136	*		*
		1137	*	*NOTES	*
		1138	*	ERROR PROCEDURES	*
		1139	*	IF A DATA REGISTER PARITY CHECK IS ENCOUNTERED, THE DISPLAY	*
		1140	*	UNIT IS TURNED OFF AND THEN REACTIVATED. A 100MS LOOP IS	*
		1141	*	EXECUTED AND THEN ANOTHER TEST FOR ERRORS MADE. IF NO ERRORS	*
		1142	*	RESULT, THE ERROR PENDING INDICATOR IS SET INDICATING AN ERROR	*
		1143	*	IS TO BE LOGGED, AND NORMAL PROCESSING IS CONTINUED. IF THE	*
		1144	*	ERROR IS STILL PRESENT, THE HARD ERROR INDICATOR IS SET AND	*
		1145	*	IOCS EXITS TO THE CALLING PROGRAM (A HARD HALT WILL BE	*
		1146	*	EXECUTED BY NERLOG WHEN THE ERROR IS LOGGED).	*
		1147	*		*
		1148	*	REGISTER USAGE	*
		1149	*	THE STATUS OF BOTH THE INDEX AND BASE REGISTERS IS SAVED UPON	*
		1150	*	ENTRY TO AND RESTORED UPON EXIT FROM DSPLYN.	*
		1151	*		*
		1152	*	SAVED/RESTORED AREAS	*
		1153	*	N/A.	*
		1154	*		*
		1155	*	MODIFICATION CONSIDERATIONS	*
		1156	*	N/A.	*
		1157	*		*
		1158	*	REQUIRED MODULES	*
		1159	*	@SYSEQ - COMMON SYSTEM EQUATES.	*
		1160	*	@HMWEQ - HARDWARE EQUATES.	*

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 28
					1161	*	@FXDEQ - SYSTEM NUCLEUS AND INDICATOR VALUE EQUATES.	*
					1162	*	@CANEQ - COMMON CORE LOCATIONS OUTSIDE NUCLEUS EQUATES.	*
					1163	*	@CY0EQ - CYLINDER ZERO EQUATES.	*
					1164	*		*
					1165	*	OTHER	*
					1166	*	N/A.	*
					1167	*****		
				0100	1169	DSLBSL	EQU 256	LENGTH OF BASE EXTENSION
2800					1170		ORG X'2800'	ORIGIN
				2800	1171		USING DSLBSE,@BR	BASE VALUE
				2800	1172	DSLBSL	EQU *	BASE VALUE
2800	34	01	03C5		1173		ST \$BRSAV,@BR	SAVE BASE REG
2804	35	01	044D		1174		L \$CRTAD,@BR	LOAD BASE REG
2808	74	02	2A		1175		ST DSL090+@OP1(,@BR),@XR	SAVE XR
280B	74	08	32		1176		ST DSL100+@OP1(,@BR),@ARR	SAVE RETURN ADDR
280E	3D	10	043B		1177		CLI \$EXFTR,@4K	TEST FOR 12K STOR SIZE
2812	F2	02	25		1178		JNL DSL200	DO RELOCATION IF NOT
2815	D1	92	1B		1179	DSL050	TIO DSL052(,@BR),@DSBSY	TEST IF CRT ON SYSTEM
2818	F2	87	03		1180		J DSL053	DON'T TURN OFF DSPLAY
281B	F3	90	00		1182	DSL052	SIO 0,@CRTQ	TURN OFF CRT
281E	4E	00	25 043B		1183	DSL053	ALC DSL055+@D1(1,@BR),\$EXFTR	GET TRUE ADDRESS
2823	C0	87	2200		1184	DSL055	B \$\$PYCD	CLEAR CRT BUFFER
2827	C2	02	0000		1185	DSL090	LA *-*,@XR	RESTORE XR
282B	35	01	03C5		1186		L \$BRSAV,@BR	RESTORE BR
282F	C0	87	0000		1187	DSL100	B *-*	RETURN TO CALLER
					1188	*****		

[illegible]

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE	30
				283A	1196	DSL200	EQU *				ENTRY TO RELOCATE ADDR
	283A	75	02	34	1197		L DSPLYA(,@BR),@XR				LOAD INDEX REG
				2900	1198		USING DSPYMP,@XR				ADDR OF IOCS
	283D	9E	01	03	37		ALC DS0005(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2841	9E	01	07	37		ALC DS0010(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2845	9E	01	0B	37		ALC DS0020(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2849	9E	01	3A	37		ALC DS0025(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	284D	9E	01	4F	37		ALC DS0030(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2851	9E	01	5F	37		ALC DS0070(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2855	9E	01	93	37		ALC DS0080(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2859	9E	01	97	37		ALC DS0090(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	285D	9E	01	72	37		ALC DS0100(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2861	9E	01	76	37		ALC DS0110(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1209	*					
	2865	76	02	39	1210		A DSL256-DSLBSE(,@BR),@XR				INCREMENT INDEX VALUE
P02					1211		USING DSPYMP,DSLBLS,@XR				NEXT 256 BYTES
P08	2868	00	00	00	00		ALC DS0130(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
P08	286C	00	00	00	00		ALC DS0140(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
P08	2870	00	00	00	00		ALC DS0150(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
P08	2874	00	00	00	00		ALC DS0240(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
P08	2878	00	00	00	00		ALC DS0250(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1217	*					
	287C	C2	02	3B00	1218		LA DSPCMD+4096,@XR				SET NEW BASE VALUE
				2B00	1219		USING DSPCMD,@XR				NEW BASE VALUE
P08	2880	00	00	00	00		ALC DS0260(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
P08	2884	00	00	00	00		ALC DS0270(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	2888	9E	01	0B	37		ALC DS0275(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
	288C	9E	01	0F	37		ALC DS0280(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
N04	2890	00	00	00	00		ALC DS0290(@CADDR,@XR),DSLFTTR-DSLBSE(,@BR)				ADD RELOCATION
					1225	*					
P01					1226		B DSL050-DSLBSE(,@BR				GO EXIT

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15,	MOD	00	03/06/22	PAGE	31
					1228	*****								
					1229	* PATCH AREA 1								*
					1230	*****								
					1231	*								
					1232	* CALCULATE AREA LEFT IN THIS SECTOR								
					1233	*								
2900				2894	1234	\$\$\$\$L1 EQU	*							START OF PATCH AREA 1
					1235	ORG	*,256,0							SET LOC CNTR TO NEXT SECTOR
				2900	1236	\$\$\$\$T1 EQU	*							DEFINE ADDR OF SCTR BNDRY
2894					1237	ORG	\$\$\$\$L1							SET LOC CNTR TO START OF
					1238	*								* PATCH AREA
2894				28FF	1239	\$\$\$\$\$1 DS	CL(\$\$\$\$T1-\$\$\$\$L1)							PATCH AREA
					1240	*****								
					1241	*** END OF EXPANSION ***								

#DSPLY - MODULE PROLOG

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 03/06/22 PAGE 32
		1243		*****	
		1244	*	THIS IOCR IS USED FOR ALL CRT OUTPUT AND CONTROL, IT CONTAINS	*
		1245	*	ENTRY POINTS FOR NORMAL DISPLAY (DSPLYN), PRINTER FAILURES	*
		1246	*	(PRFAIL), AND COMMAND KEY CONTROLS (DSCMND). ENTRY TO 'DISPLYN'	*
		1247	*	PROVIDES FOR 7 FUNCTIONS...	*
		1248	*	X'40' PRINT ONLY	*
		1249	*	X'C0' PRINT AND RETURN CURSOR	*
		1250	*	X'80' RETURN CURSOR	*
		1251	*	X'11' BACKSPACE	*
		1252	*	X'10' BACKSPACE	*
		1253	*	X'4F' ROLL DOWN AND PRINT	*
		1254	*	X'FF' WAIT AND CHECK FOR ERRORS	*
		1255		*****	
2900		2924	1256	USING DSBASE,@BR	BASE VALUE FOR DSPLYN
			1257	ORG DSLBSE+X'0100'	STARTING ADDRESS
2900 3C 80 2945		2900	1258 DSPYMP EQU *	ENTRY TO PRINT ON CRT AND MP	
			1259 MVI DS0053+@Q,@NOP	SET BRANCH FO MATRIX PRINTER	
		2903	1260 DS0005 EQU *-1	RELOCATABLE ADDRESS	
		2904	1261 DSPLYN EQU *	ENTRY TO DSPLYN	
2904 34 01 2975			1262 ST DS0100+@OP1,@BR	SAVE BASE REGISTER	
		2907	1263 DS0010 EQU *-1	RELOCATABLE ADDRESS	
2908 C2 01 2924			1264 LA DSBASE,@BR	LOAD BASE REGISTER	
		290B	1265 DS0020 EQU *-1	RELOCATABLE ADDRESS	
290C 74 02 55			1266 ST DS0110+@OP1(,@BR),@XR	SAVE INDEX REGISTER	
290F 76 08 61			1267 A DSC001(,@BR),@ARR	POINT TO PARM	
2912 74 08 03			1268 ST DS0050+@OP1(,@BR),@ARR	STORE FOR XR	
2915 76 08 61			1269 A DSC001(,@BR),@ARR	CALC RETURN ADDR	
2918 74 08 59			1270 ST DS0120+@OP1(,@BR),@ARR	SET RETURN BRANCH	
			1271 *		
291B D1 92 00			1272 TIO DS0050(,@BR),@DSBSY	BRANCH IF CRT IS DISPLAYING	
291E 71 90 73			1273 LIO DSBUFA(,@BR),@CRTQ	LOAD LSR WITH DISPLAY BUFR ADDR	
2921 F3 92 00			1274 SIO 0,@CRTDS	START DISPLAYING BUFFER	
2924 35 02 0000			1275 DS0050 L *-*,@XR	LOAD XR WITH PPL ADDR	
2928 6C 03 66 03			1276 MVC DSLIST+@PDATA(@PLNGH,@BR),@PDATA(,@XR)	MOVE IN PPL	
292C 0C 0D 0462 045B			1277 MVC \$PLST3(2*@DPLNG+2),\$PLST2	PUSH DOWN PARM LIST STACK	
2932 1C 06 0454 68			1278 MVC \$PLST1(@DPLNG+1),DSLST+@DPLNG-1(,@BR)	SAVE PPL	
2937 C1 90 2A48			1279 TIO DSDOWN,@CRERR	BRANCH IF CRT ERROR	
		293A	1280 DS0025 EQU *-1	RELOCATABLE ADDRESS	
293B F2 FF 00			1281 JC DS0052,X'FF'	CLEAR PSR FALSE/TRUE BIT	
293E 7D 4F 63			1282 DS0052 CLI DSLIST+@PCTRL(,@BR),@RLDWN	ROLL DOWN REQUESTED	
2941 F2 81 D0			1283 JE DS0250	GO ROLL DOWN	
2944 F2 87 09			1284 DS0053 JC DS0055,@UCB	JUMP IF NO MATRIX PRINTER OP	
2947 7C 87 21			1285 MVI DS0053+@Q(,@BR),@UCB	SET NEXT OP FOR CRT ONLY	
294A C0 87 0465			1286 B \$SPRNT	GO PRINT ON MP	
294E 2987		294F	1287 DC AL2(DSLIST)	PPL ADDR	
		294F	1288 DS0030 EQU *-1	RELOCATABLE ADDRESS	
2950 78 40 63			1289 DS0055 TBN DSLIST+@PCTRL(,@BR),@PRINT	DOES OP PRINT ?	
2953 F2 10 85			1290 JT DS0200	JUMP IF YES	
2956 78 80 63			1291 DS0060 TBN DSLIST+@PCTRL(,@BR),@RETRN	CARRIAGE RETURN REQUESTED ?	
2959 F2 90 03			1292 JF DS0070	JUMP IF NO	
295C D0 87 85			1293 DS0065 B DSINDX(,@BR)	GO INDEX BUFFER	
295F 78 10 63			1295 DS0070 TBN DSLIST+@PCTRL(,@BR),@BKSPC	BACKSPACE REQUESTED	
2962 F2 90 0D			1296 JF DS0100	JUMP IF NO	
2965 5F 01 68 61			1297 SLC DSCPOS(@CADDR,@BR),DSC001(,@BR)	SET CURRENT POS BACK ONE	
2969 75 02 68			1298 L DSCPOS(,@BR),@XR	XR POINTS TO NEW POSITION	

[illegible]

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	03/06/22	PAGE	34
				2924	1306	DSBASE	EQU	DS0050			BASE ADDR
				297E	1307	DSHIST	EQU	*			HISTORY ENTRY (8 BYTES)
	297E	92		297E	1308		DC	AL1(@CRTDS)			SIO Q BYTE
	297F	00		297F	1309		DC	XL1'00'			SIO CTRL BYTE
	2980			2981	1310	DSSENSE	DS	CL2			SENSE BYTES
	2982	0000		2983	1311		DC	XL2'0000'			UNUSED
	2984	0001		2985	1312	DSC001	DC	XL2'0001'			CONSTANT OF ONE
	2986	C3		2986	1313		DC	CL1'C'			PPL CODE FOR CRT (FE MAP)
				2987	1314	DSLISIT	EQU	*			PPL ADDR.
	2987			298A	1315		DS	CL4			PPL
	298B	2F81		298C	1316	DSCPOS	DC	AL2(DSLIN1)			CURRENT POSITION ADDR
N06				298C	1317	DS0070	EQU	DSCPOS			RELOCATABLE ADDRESS
	298D			298D	1318	DSCNTR	DS	CL1			LOOP COUNTER
	298E	0040		298F	1319	DSC064	DC	AL2(@DLNLG)			LENGTH OF LINE
	2990	FFC0		2991	1320	DSNO64	DC	AL2(0-@DLNLG)			NEG LINE LENGTH
	2992	2904		2993	1321	DSPADD	DC	AL2(DSPLYN)			ADDR OF DISPLAY ENTRY
				2993	1322	DS0080	EQU	DSPADD			RELOCATABLE ADDRESS
	2994	0707		2995	1323	DSPRNT	DC	AL2(\$\$PRNT)			ADDR OF DPRINT
	2996	2C01		2997	1324	DSBUFA	DC	AL2(DSLINF)			ADDR OF START OF DSPLY BUF
				2997	1325	DS0090	EQU	DSBUFA			RELOCATABLE ADDRESS
	2998	2FC1		2999	1326	DSEINDB	DC	AL2(DSBFEN)			ADDR OF BYTE FOLLOWING BUFR
N06				2999	1327	DS0100	EQU	DSEINDB			RELOCATION ADDR
	299A	2F41		299B	1328	DSLNI1A	DC	AL2(DSLIN2)			ADDR OF START OF LINE 1
N06				299B	1329	DS0110	EQU	DSLNI1A			RELOCATEABLE ADDR
	299C	0C		299C	1330	DSPSNS	DC	AL1(@CKY12)			COMMAND KEY SNS BYTE
	299D			299E	1331	DSCNTC	DS	CL2			CLEAR CRT COUNTER
	299F	16		299F	1332	DSPICT	DC	XL1'16'			LOOP VALUE FOR 100MS
	29A0	0C		29A0	1333	DSPK12	DC	AL1(@CKY12)			COMMAND KEY 12 LIO CNTR
	29A1	0D		29A1	1334	DSPK13	DC	AL1(@CKY13)			COMMAND KEY 13 LIO CNTR
	29A2	0E		29A2	1335	DSPK14	DC	AL1(@CKY14)			COMMAND KEY 14 LIO CNTR
	29A3	0F		29A3	1336	DSPK15	DC	AL1(@CKY15)			COMMAND KEY 15 LIO CNTR
	29A4	10		29A4	1337	DSPK16	DC	AL1(@CKY16)			COMMAND KEY 16 LIO CNTR
	29A5			29A5	1338	DSINIT	DS	CL1			BUFFER START ADDR SAVE AREA
	29A6			29A6	1339	DSINCT	DS	CL1			COUNTER FOR CLEAR OPERATION
				00C1	1340	DSP193	EQU	193			193
				00C0	1341	DSP192	EQU	192			192
	29A7	00C0		29A8	1342	DSPPRO	DC	AL2(DSP192)			INCREMENT FACTOR FOR CLEAR
				0005	1343	DSP005	EQU	5			TOTAL FOR CLEAR LOOP

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ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 35
				2924	1345		USING DSBASE,@BR	BASE VALUE FOR INDEX
				29A9	1346	DSINDX	EQU *	ENTRY TO INDEX A LINE
29A9	74	08	B6		1347		ST DSI050+@OP1(,@BR),@ARR	SAVE RETURN ADDR
29AC	75	02	68		1348		L DSCPOS(,@BR),@XR	XR = CURRENT POSITION
29AF	BA	40	00		1349		SBN 0(,@XR),@CURSR	TURN CURSOR OFF
29B2	75	02	73		1350		L DSBUFFA(,@BR),@XR	XR POINTS TO TOP LINE
29B5	7C	0E	69		1351		MVI DSCNTR(,@BR),@DLNCT-1	SET LOOP COUNTER
29B8	AC	3F	3F 7F		1352	DSI010	MVC @DLNLG-1(@DLNLG,@XR),2*@DLNLG-1(,@XR)	MOVE LINE UP
29BC	76	02	6B		1353		A DSC064(,@BR),@XR	INCR BUF POINTER TO NEXT LINE
29BF	5F	00	69 61		1354		SLC DSCNTR(1,@BR),DSC001(,@BR)	DECREMENT COUNTER
29C3	D0	84	94		1355		BH DSI010(,@BR)	BRANCH IF MORE LINES
29C6	BC	40	40		1356		MVI @DLNLG(,@XR),@BLANK	SET BLANK
29C9	AC	3F	3F 40		1357		MVC @DLNLG-1(@DLNLG,@XR),@DLNLG(,@XR)	CLEAR BOTTOM LINE
29CD	BB	40	00		1358		SBF 0(,@XR),@CURSR	SET CURSOR ON
29D0	74	02	68		1359		ST DSCPOS(,@BR),@XR	SET CURRENT POSITION
29D3	3C	00	03E2		1360		MVI \$CRPOS,@ZERO	SET CURSOR POSITION TO ZERO
29D7	C0	87	0000		1361	DSI050	B *-*	RETURN

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 36
				2924	1363		USING DSBASE,@BR	BASE SPECIFICATION
				29DB	1364	DS0200	EQU *	ENTRY TO PRINT
	29DB	7D	FF 63		1365		CLI DSLIST+@PCTRL(,@BR),@PWAIT	WAIT ONLY FUNCTION
	29DE	D0	81 4E		1366		BE DS0100(,@BR)	EXIT IF YES
					1367	*		
					1368	*	NORMAL PRINTING REQUIRED	
					1369	*		
	29E1	75	02 68		1370	DS0210	L DSCPOS(,@BR),@XR	LOAD DISPLAY POS
	29E4	5C	01 C8 66		1371		MVC DS0215+@DOP2(@CADDR,@BR),DSLST+@PDATA(,@BR)	SET DATA
	29E8	8C	00 00 0000		1372	DS0215	MVC 0(1,@XR),*-*	MOVE CHAR TO DISPLAY BUFR
	29ED	5E	01 68 61		1373		ALC DSCPOS(@CADDR,@BR),DSC001(,@BR)	INCREMENT DISPLAY POS
	29F1	1E	00 03E2 61		1374		ALC \$CRPOS,DSC001(1,@BR)	INCREMENT CURSOR POSITION FOR
					1375	*		* PROCESSOR PRINT ROUTINE
	29F6	5F	00 64 61		1376		SLC DSLIST+@PRCNT(1,@BR),DSC001(,@BR)	DECREMENT DATA COUNT
	29FA	F2	81 0E		1377		JZ DS0220	JUMP OUT IF FINISHED
	29FD	5D	01 68 75		1378		CLC DSCPOS(@CADDR,@BR),DSENB(,@BR)	IS LINE FULL
	2A01	D0	81 85		1379		BE DSINDX(,@BR)	BRANCH TO INDEX IF YES
	2A04	5E	01 66 61		1380		ALC DSLIST+@PDATA(@CADDR,@BR),DSC001(,@BR)	INCREMENT DATA ADDR
	2A08	D0	87 BD		1381		B DS0210(,@BR)	GO MOVE NEXT CHAR
	2A0B	BB	40 01		1383	DS0220	SBF 1(,@XR),@CURSR	SET CURSOR AT NEXT POSITION
P01					1384		CLC DSCPOS(@CADDR,@BR),DSENB(,@BR)	BUFFER FULL ?
	2A0E	D0	01 32		1385		BNE DS0060(,@BR)	IF NOT, GO CHECK RETURN OP
	2A11	D0	87 38		1386		B DS0065(,@BR)	IF YES, DO RETURN OP
					1387	*		
					1388	*	ENTRY TO ROLL DOWN AND PRINT ON TOP LINE	
					1389	*		
	2A14	7C	0D 69		1390	DS0250	MVI DSCNTR(,@BR),@DLNCT-2	SET NUMBER OF LINES TO MOVE
	2A17	75	02 77		1391		L DSLN1A(,@BR),@XR	POINT XR TO START OF BOTTOM IN
N04	2A1A	00	00 00		1392	DS0260	A DSN064(,@BR),@XR	DECREMENT XR BY LINE LENGTH
P02					1393		MVC 2*@DLNLG-1(@DLNIG,@XR),@DLNLG-1(@XR)	MOVE A LINE DOWN
	2A1D	5F	00 69 61		1394		SLC DSCNTR(1,@BR),DSC001(,@BR)	DECREMENT COUNTER
	2A21	D0	84 F6		1395		BH DS0260(,@BR)	GO MOVE NEXT LINE IF MORE
	2A24	BC	40 3F		1396		MVI @DLNLG-1(,@XR),@BLANK	SET BLANK AS LAST CHAR OF TOP
	2A27	9C	3E 3E 3F		1397		MVC @DLNLG-2(@DLNLG-1,@XR),@DLNLG-1(,@BR)	LINE AND CLEAR IT
P17	2A2B	00	00 0000 00		1398		MVC DS02704+@DOP2(@CADDR),DSLST+@PDATA(,@BR)	SET DATA ADDR
				2A2E	1399	DS0130	EQU *-2	RELOCATABLE ADDRESS
	2A30	8C	00 00 0000		1400	DS0270	MVC 0(1,@XR),*-*	MOVE DATA CHAR TO DISPLAY BUF
	2A35	76	02 61		1401		A DSC001(,@BR),@XR	BUMP BUFFER POINTER
N04	2A38	00	00 0000 00		1402		ALC DS0270+@DOP2(@CADDR),DSC001(,@BR)	INCREMENT DATA ADDR
				2A3B	1403	DS0140	EQU *-2	RELOCATABLE ADDRESS
	2A3D	5F	00 64 61		1404		SLC DSLIST+@PRCNT(1,@BR),DSC001(,@BR)	DECREMENT CHAR COUNT
	2A41	C0	84 2A30		1405		BH DS0270	BRANCH IF MORE CHARS
				2A44	1406	DS0150	EQU *-1	RELOCATABLE ADDRESS
	2A45	D0	87 4E		1407		B DS0100(,@BR)	GO EXIT

#DSPLY - MODULE PROLOG

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 37
				2A48	1409	DSDOWN	EQU *	ENTRY TO ERP
	2A48	70 92 5D			1410	SNS	DSSENSE(,@BR),@CRTDS	SENSE STATUS
	2A4B	70 90 5F			1411	SNS	DSSENSE+@REGL(,@BR),@CRTQ	SENSE LSR FOR @BR
	2A4E	1C 07 0435 61			1412	MVC	\$HIST1(#HISLN),DSHIST+#HISLN-1(,@BR)	SET HISTORY ENTRY
	2A53	3A 04 03D5			1413	SBN	\$INDR2,\$ERPND	INDICATE ERROR
	2A57	F3 90 00			1414	SIO	0,@CRTQ	TURN OFF CRT
	2A5A	F3 92 00			1415	SIO	0,@CRTDS	TURN ON CRT
	2A5D	5C 01 7A 7B			1416	MVC	DSCNTC(2,@BR),DSPICT(,@BR)	SET UP 100 MS LOOP
	2A61	5F 01 7A 61			1417	DSD100	SLC DSCNTC(2,@BR),DSC001(,@BR)	DECREMENT COUNTER
	2A65	C0 84 2A61			1418	BH	DSD100	LOOP FOR 100 MS
				2A68	1419	DS0240	EQU *-1	RELOCATABLE ADDRESS
	2A69	C1 90 2A70			1420	TIO	DSD150,@CRERR	ANOTHER ERROR
N06				2A6C	1421	DS0250	EQU *-1	RELOCATABLE ADDRESS
	2A6D	D0 87 1A			1422	B	DS0052(,@BR)	IF NOT ERROR, CONTINUE PROCESS
	2A70	3A 20 03D2			1423	DSD150	SBN \$IOIND,\$HRDER	SET HARD ERROR INDR
	2A74	D0 87 4E			1424	B	DS0100(,@BR)	GO EXIT DSPLYN
					1425	*****		
				2A77	1426	\$\$\$\$L2	EQU *	START OF PATCH AREA 2
2A77				2AFF	1427	\$\$\$\$\$2	DS XL(\$\$PYCD+X'0900'-\$\$\$L2)	PATCH AREA

#DSPLY - COMMAND KEY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 38
					1429		*****	
					1430	*	THIS ROUTINE IS ENTERED WHEN A COMMAND KEY IS SENSED.	*
					1431	*	VARIOUS INDICATORS ARE SET IF A ROLL COMMAND IS DETERMINED.	*
					1432		*****	
		2B00			1433	ORG	\$\$PYCD+X'0900'	ORIGIN FOR CMND KEY PROCESSING
				2924	1434	USING	DSBASE,@BR	BASE VALUE
				2B00	1435	DSPCMD EQU	*	ENTRY FOR COMMAND KEY PROCESS
N06	2B00	34	08	2B99	1436	ST	DSP100+@OP1,@ARR	SAVE RETURN ADDR
				2B03	1437	DS0260 EQU	*-1	RELOCATABLE ADDR
N06	2B04	34	01	2B95	1438	ST	DSP095+@OP1,@BR	SAVE BR
				2B07	1439	DS0270 EQU	*-1	RELOCATABLE ADDR
	2B08	C2	01	2924	1440	LA	DSBASE,@BR	LOAD BASE REG
				2B0B	1441	DS0275 EQU	*-1	RELOCATABLE ADDR
	2B0C	34	02	2B91	1442	ST	DSP090+@OP1,@XR	SAVE XR
				2B0F	1443	DS0280 EQU	*-1	RELOCATABLE ADDR
	2B10	38	08	03D2	1444	TBN	\$IOIND,\$CMDKY	COMMAND KEYS REQUESTED ?
	2B14	F2	90	48	1445	JF	DSP040	JUMP IF NO
					1446	*		
	2B17	71	11	7D	1447	LIO	DSPK13(,@BR),@KEYBD+@CMLON	TURN COMMAND KEYS INDRS 13-16
	2B1A	71	11	7E	1448	LIO	DSPK14(,@BR),@KEYBD+@CMLON	* ON
	2B1D	71	11	7F	1449	LIO	DSPK15(,@BR),@KEYBD+@CMLON	*
	2B20	71	11	80	1450	LIO	DSPK16(,@BR),@KEYBD+@CMLON	*
	2B23	7D	10	78	1451	CLI	DSPSNS(,@BR),@CKY16	ROLL UP FUNCTION ?
	2B26	F2	01	07	1452	JNE	DSP010	JUMP NO
	2B29	3C	01	03D3	1453	MVI	\$CRTIN,\$CRTUP	SET ROLL UP INDR
	2B2D	71	10	80	1454	LIO	DSPK16(,@BR),@KEYBD+@CMOFF	TURN ROLL UP INDR OFF
					1455	*		
	2B30	7D	0F	78	1456	DSP010 CLI	DSPSNS(,@BR),@CKY15	ROLL STOP ?
	2B33	F2	01	07	1457	JNE	DSP020	JUMP NO
	2B36	3A	08	03D3	1458	SBN	\$CRTIN,\$CRTSP	SET STOP INDR
	2B3A	71	10	7F	1459	LIO	DSPK15(,@BR),@KEYBD+@CMOFF	TURN STOP INDR LIGHT OFF
					1460	*		
	2B3D	7D	0E	78	1461	DSP020 CLI	DSPSNS(,@BR),@CKY14	ROLL DOWN ?
	2B40	F2	01	0E	1462	JNE	DSP030	JUMP NO
	2B43	38	02	03D6	1463	TBN	\$INDR3,\$LIST	IS ROLL DOWN ALLOWED ?
	2B47	F2	90	07	1464	JF	DSP030	DON'T SET INDR IF NOT
	2B4A	3C	02	03D3	1465	MVI	\$CRTIN,\$CRTDN	SET ROLL DOWN INDR
	2B4E	71	10	7E	1466	LIO	DSPK14(,@BR),@KEYBD+@CMOFF	SET ROLL DOWN LIGHT OFF
					1467	*		
	2B51	7D	0D	78	1468	DSP030 CLI	DSPSNS(,@BR),@CKY13	POP UP KEY ?
	2B54	F2	01	08	1469	JNE	DSP040	JUMP NO
	2B57	3A	04	03D3	1470	SBN	\$CRTIN,\$CRTPU	SET POKUP INDR ON
	2B5B	3B	08	03D3	1471	SBF	\$CRTIN,\$CRTSP	SET ROLL STOP OFF
	2B5F	7D	0C	78	1472	DSP040 CLI	DSPSNS(,@BR),@CKY12	CLEAR COMMAND ?
	2B62	F2	01	26	1473	JNE	DSP080	JUMP TO EXIT IF NO
	2B65	7C	00	82	1474	MVI	DSINCT(,@BR),@ZERO	INITIALIZE COUNTER TO ZERO
	2B68	5C	01	81 73	1475	MVC	DSINIT(,@BR),DSBUFA(@CADDR,@BR)	SET BUFFER START ADDRESS
	2B6C	5E	01	81 84	1476	DSP050 ALC	DSINIT(,@BR),DSPPRO(@CADDR,@BR)	INCR ADDR FOR PROPAGATION
	2B70	75	02	81	1477	L	DSINIT(,@BR),@XR	SET POINTER TO BUFFER ADDR
	2B73	BC	40	01	1478	MVI	1(,@XR),@BLANK	PROPAGATE BLANKS TO INITIALLY
	2B76	AC	C0	00 01	1479	MVC	0(,@XR),1(DSP193,@XR)	* CLEAR CRT BUFFER
	2B7A	5E	00	82 61	1480	ALC	DSINCT(,@BR),DSC001(1,@BR)	INCREMENT COUNTER
	2B7E	7D	05	82	1481	CLI	DSINCT(,@BR),DSP005	IF CLEAR OPERATION NOT COMPLETE
	2B81	C0	01	2B6C	1482	BNE	DSP050	* GO PROPAGATE MORE BLANKS
				2B84	1483	DSP290 EQU	*-1	RELOCATABLE ADDR
	2B85	75	02	68	1484	L	DSCPOS(,@BR),@XR	GET CURRENT POSITION

#DSPLY - COMMAND KEY ROUTINE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		03/06/22	PAGE	39
2B88	BB	40 00		1485		SBF 0(,@XR),@CURSR					SET CURSOR ON
2B8B	7C	0C 78		1486	DSP080	MVI DSPSNS(,@BR),@CKY12					SET NEXT ENTRY TO DO CLEAR
				1487	*						
2B8E	C2	02 0000		1488	DSP090	LA *-*,@XR					RESTORE XR
2B92	C2	01 0000		1489	DSP095	LA *-*,@BR					RESTORE BR
2B96	C0	87 0000		1490	DSP100	B *-*					RETURN
				1491	*****						
	2B9A			1492	\$\$\$L3	EQU *					START OF PATCH AREA 3

#DSPLY - COMMAND KEY ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 03/06/22 PAGE 40
2C01		1494		ORG	X'2C01'	ORIGIN OF DISPLAY BUFFER
	2C01	1495	DSLINF	EQU	*	START OF TOP LINE
	2C41	1496	DSLINE	EQU	DSLINF+@DLNLG	START OF LINE 14
	2C81	1497	DSLIND	EQU	DSLINE+@DLNLG	START OF LINE 13
	2CC1	1498	DSLINC	EQU	DSLIND+@DLNLG	START OF LINE 12
	2D01	1499	DSLINB	EQU	DSLINC+@DLNLG	START OF LINE 11
	2D41	1500	DSLINA	EQU	DSLINB+@DLNLG	START OF LINE 10
	2D81	1501	DSLIN9	EQU	DSLINA+@DLNLG	START OF LINE 9
	2DC1	1502	DSLIN8	EQU	DSLIN9+@DLNLG	START OF LINE 8
	2E01	1503	DSLIN7	EQU	DSLIN8+@DLNLG	START OF LINE 7
	2E41	1504	DSLIN6	EQU	DSLIN7+@DLNLG	START OF LINE 6
	2E81	1505	DSLIN5	EQU	DSLIN6+@DLNLG	START OF LINE 5
	2EC1	1506	DSLIN4	EQU	DSLIN5+@DLNLG	START OF LINE 4
	2F01	1507	DSLIN3	EQU	DSLIN4+@DLNLG	START OF LINE 3
	2F41	1508	DSLIN2	EQU	DSLIN3+@DLNLG	START OF LINE 2
	2F81	1509	DSLIN1	EQU	DSLIN2+@DLNLG	START OF LINE 1
	2FC1	1510	DSBFEN	EQU	DSLIN1+@DLNLG	OVERFLOW BYTE FO BUFFER
	2FC2	1511	\$\$\$SL4	EQU	DSBFEN+1	START OF PATCH AREA
		1512	*			
		1513		PRINT	ON	
	FFFF	1514		END		

DIAGNOSTICS

STMT ERROR CODE MESSAGE VER 15, MOD 00 03/06/22 PAGE 41

1211	P02	INVALID OPERAND FORMAT
1212	P08	ADDRESSABILITY ERROR
1213	P08	ADDRESSABILITY ERROR
1214	P08	ADDRESSABILITY ERROR
1215	P08	ADDRESSABILITY ERROR
1216	P08	ADDRESSABILITY ERROR
1220	P08	ADDRESSABILITY ERROR
1221	P08	ADDRESSABILITY ERROR
1224	N04	REFERENCE TO UNDEFINED SYMBOL
1226	P01	INVALID OPERAND DELIMITER
1317	N06	PREVIOUSLY DEFINED SYMBOL
1327	N06	PREVIOUSLY DEFINED SYMBOL
1329	N06	PREVIOUSLY DEFINED SYMBOL
1384	P01	INVALID OPERAND DELIMITER
1392	N04	REFERENCE TO UNDEFINED SYMBOL
1393	P02	INVALID OPERAND FORMAT
1398	P17	INVALID SYMBOL
1402	N04	REFERENCE TO UNDEFINED SYMBOL
1421	N06	PREVIOUSLY DEFINED SYMBOL
1437	N06	PREVIOUSLY DEFINED SYMBOL
1439	N06	PREVIOUSLY DEFINED SYMBOL

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 21

CROSS REFERENCE

VER 15, MOD 00 03/06/22 PAGE 42

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$1	108	28FF	1239	
\$\$\$\$\$2	137	2AFF	1427	
\$\$\$\$L1	001	2894	1234	1237 1239
\$\$\$\$L2	001	2A77	1426	1427
\$\$\$\$L3	001	2B9A	1492	
\$\$\$\$T1	001	2900	1236	1239
\$\$\$CMD	001	0020	0850	
\$\$\$DAT	001	0040	0849	
\$\$\$EPL	001	0091	0846	
\$\$\$ERN	001	0080	0900	
\$\$\$FUN	001	0010	0851	
\$\$\$NLN	001	00A0	0896	
\$\$\$SL4	001	2FC2	1511	
\$\$\$STD	001	0081	0845	
\$\$BNLN	001	0605	0826	0828
\$\$CDBS	001	08C0	0876	
\$\$CDND	001	0666	0835	
\$\$CDRD	001	0890	0874	0876
\$\$CKEY	001	0603	0824	
\$\$CKFF	001	0B3D	0856	
\$\$COFF	001	0B44	0855	
\$\$CSNS	001	209C	0885	
\$\$DATB	001	0BBF	0857	
\$\$EOSA	001	0AFE	0854	
\$\$ERSK	001	1C00	0895	
\$\$FITS	001	1D00	0903	
\$\$FLIB	001	06FF	0902	
\$\$ILEN	001	0601	0820	0822 0826
\$\$ILHD	001	0600	0818	0820
\$\$INLN	001	0607	0833	0835 0837
\$\$INND	001	06FA	0837	
\$\$KBDT	001	09E1	0844	0848
\$\$KBSN	001	09E2	0848	0853
\$\$KLD1	001	0600	0908	
\$\$KLD2	001	0700	0910	
\$\$KLD3	001	0C00	0912	
\$\$LPOS	001	09EB	0853	
\$\$PCNT	001	07E9	0869	
\$\$PLYN	001	2004	0883	
\$\$PRES	001	0890	0842	0844 0854 0855 0856 0857 0874
\$\$PRFL	001	2143	0887	
\$\$PRNT	001	0707	0863	0864 0868 0869 1323
\$\$PRTN	001	0782	0864	
\$\$PSIO	001	07CE	0868	
\$\$PYCD	001	2200	0889	1184 1427 1433
\$\$PYMP	001	2000	0881	0883 0885 0887 0889
\$\$SLIB	001	1C00	0898	
\$\$TPCD	001	0606	0828	0833
\$\$UPAR	001	0602	0822	0824
\$\$WSPB	001	1E00	0901	
\$\$XIND	001	06FF	0899	0902
\$\$ZERO	001	0000	0413	0414 0416 0417 0418 0422 0881
\$ABORT	001	0010	0526	
\$BASIC	001	0080	0584	
\$BIGCD	001	0080	0660	
\$BLDPL	001	0579	0793	0795

CROSS REFERENCE

VER 15, MOD 00 03/06/22 PAGE 43

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$BLNOE	001	0569	0783	
\$BLOAD	001	0522	0774	0776 0779 0792 0793
\$BLRTN	001	0550	0782	0783
\$BRSAV	001	03C5	0471	0472 1173* 1186
\$BSADR	001	0587	0798	0800
\$BUFPT	001	03E3	0679	0680
\$CABLD	001	04B4	0752	0753
\$CAERK	001	0469	0729	0732
\$CAERR	001	03CD	0477	0479
\$CAIPL	001	049D	0748	0750
\$CALLI	001	0008	0669	
\$CARDI	001	0001	0440	
\$CARPL	001	04A1	0750	0752
\$CIENT	001	0483	0739	0740
\$CIEXT	001	0480	0738	0739
\$CIMSK	001	0476	0735	0738
\$CISUS	001	0496	0743	0748
\$CLBFR	001	0010	0627	
\$CMDKY	001	0008	0539	1444
\$CMODE	001	0002	0589	
\$CONFIG	001	03DD	0652	0662
\$CRPOS	001	03E2	0678	0679 1360* 1374*
\$CRTAD	001	044D	0717	0718 1174
\$CRTAV	001	0002	0533	
\$CRTDN	001	0002	0557	1465
\$CRTIN	001	03D3	0554	0561 1453* 1458* 1465* 1470* 1471*
\$CRTNO	001	0004	0536	
\$CRTPU	001	0004	0558	1470
\$CRTSP	001	0008	0559	1458 1471
\$CRTUP	001	0001	0556	1453
\$CRUSH	001	0080	0665	
\$CSDPL	001	050E	0764	0765
\$C0001	001	0464	0721	0727
\$DATE	001	043A	0702	0703
\$DBGUF	001	03E0	0664	0673
\$DBLOK	001	0001	0614	
\$DFDET	001	03E8	0685	0686
\$DISKN	001	0025	0416	
\$DKERR	001	0008	0595	
\$DKSIZ	001	03D7	0639	0647 0688
\$DK100	001	0001	0641	
\$DK200	001	0002	0642	
\$DK400	001	0004	0643	
\$DK600	001	0008	0644	
\$DK800	001	0010	0645	
\$DPLSV	001	0449	0713	0715
\$DTNMB	001	0040	0460	
\$DTRDR	001	0040	0548	
\$ENDNU	001	0600	0807	0818 0842 0863 0899 0908 0910 0912
\$ERDPL	001	046F	0732	0734
\$ERFIL	001	0040	0487	
\$ERHRD	001	0004	0619	
\$ERKEY	001	0080	0491	
\$ERLOG	001	0345	0421	
\$ERMAD	001	0472	0734	0735
\$ERPND	001	0004	0592	1413

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$ERRCT	001	03CF	0493	
\$ERRPG	001	03CE	0481	
\$ERSFL	001	0035	0486	
\$ERSTK	001	0030	0484	
\$ER050	001	0363	0422	
\$ER1N2	001	0050	0489	
\$EXADR	001	0517	0767	0769
\$EXCMD	001	0001	0521	
\$EXFTR	001	043B	0703	0708 1177 1183
\$FCIND	001	0010	0599	
\$FDIND	001	0040	0606	
\$FEARR	001	0004	0414	
\$FEMAP	001	0588	0800	0801
\$FILIB	001	03DA	0650	0651
\$FITIN	001	0010	0575	
\$FUIND	001	0020	0604	
\$GUFIO	001	0583	0797	0798
\$GUFIR	001	0008	0449	
\$HISTE	001	042E	0700	0701
\$HIST1	001	0435	0701	0702 1412*
\$HRDER	001	0020	0545	1423
\$INDR1	001	03D4	0561	0587
\$INDR2	001	03D5	0587	0612 1413*
\$INDR3	001	03D6	0612	0639 1463
\$INLNO	001	03CF	0479	0481 0493 0500
\$INRPT	001	0020	0457	
\$IOIND	001	03D2	0528	0554 1423* 1444
\$IOPGS	001	0010	0668	
\$IOYES	001	0002	0443	
\$IPLDV	001	05FF	0804	0807
\$IRKEY	001	0020	0667	
\$KEYBD	001	03E1	0673	0678
\$KEYCD	001	03C3	0437	0471
\$KEYDT	001	0040	0581	
\$KE090	001	00DE	0417	
\$KE130	001	01D5	0418	
\$KYBSY	001	0010	0454	
\$LDRTN	001	0571	0792	
\$LEVEL	001	03DF	0662	0664
\$LIST	001	0002	0616	1463
\$LMRGN	001	03C1	0432	0434
\$LNPTR	001	0080	0551	
\$LOADB	001	054A	0776	
\$LOADR	001	051A	0769	0772
\$LPRIO	001	03EA	0686	
\$LPROS	001	03E5	0681	0683
\$LPRP3	001	03E4	0680	0681
\$MOUNT	001	0020	0630	
\$MPDWN	001	0001	0530	
\$NEXTB	001	03E6	0683	0684
\$NEXTL	001	03E7	0684	0685
\$NOENB	001	0008	0622	
\$NOLST	001	0004	0446	
\$NUCBS	001	03C0	0429	0430
\$NWRKF	001	0080	0635	
\$NWRKR	001	0040	0632	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$PASWD	001	042D	0699	0700
\$PAUSD	001	04BA	0753	0755
\$PAUSE	001	0002	0523	
\$PGMDT	001	0020	0578	
\$PGMST	001	0010	0542	
\$PKERT	001	0419	0697	0699
\$PLST1	001	0454	0718	0719 1278*
\$PLST2	001	045B	0719	0720 1277
\$PLST3	001	0462	0720	0721 1277*
\$PRDEV	001	044B	0715	0717
\$PRESN	001	0002	0566	
\$PROCI	001	0001	0563	
\$PRPOS	001	03C2	0434	0437
\$PSDBR	001	04FA	0758	
\$PSDXR	001	04F2	0757	0758
\$PSTEP	001	0004	0524	
\$PSTMT	001	0008	0525	
\$PTCH1	001	03F5	0688	0692
\$READY	001	0080	0608	
\$REORD	001	0040	0666	
\$RLOAD	001	051E	0772	0774
\$RMGRN	001	03C0	0430	0432
\$RSTR	001	04D6	0755	0757 0759 0764
\$RUNIT	001	0001	0502	
\$SFAID	001	050D	0760	
\$SPRNT	001	0465	0727	0729 1286
\$SRTRN	001	04FE	0759	0760
\$STEPT	001	0002	0503	
\$SWPCR	001	0511	0765	0767
\$TABLN	001	03CB	0474	0477
\$TFLOW	001	0008	0509	
\$TRACE	001	0004	0504	
\$TRALL	001	0010	0510	
\$TROVR	001	054E	0779	0782
\$TRUNK	001	0080	0462	
\$TRVAR	001	0020	0511	
\$UNMSK	001	048D	0740	0743
\$USRDR	001	03DC	0651	0652
\$VMDEF	001	0080	0515	
\$VOLF1	001	03FE	0694	0695
\$VOLF2	001	040E	0696	
\$VOLID	001	03F6	0692	0693 0697
\$VOLR1	001	03F6	0693	0694
\$VOLR2	001	0406	0695	0696
\$WAITF	001	057F	0795	0797
\$WFDEF	001	0040	0709	
\$WFLOK	001	0008	0572	
\$WFNME	001	0443	0708	0713
\$WSIND	001	0004	0569	
\$XIND1	001	03D0	0500	0519
\$XIND2	001	03D1	0519	0528
\$XIND3	001	03D8	0647	0650
\$XPREC	001	0040	0512	
\$XRSAB	001	03C7	0472	0474
\$ZTRAD	001	05A2	0801	
\$12K	001	0004	0656	

CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$16CKY	001	0008	0658	
\$16K	001	0002	0655	
\$22IMP	001	0001	0653	
#@CORS	001	0005	0965	
#@MVSD	001	0001	0973	
#@NERO	001	0003	0967	
#@OBRA	001	0002	0969	
#@PTFL	001	0006	0988	
#@PTFS	001	0001	0987	
#@VCNT	001	0002	0985	
#@VLAB	001	0001	0980	
#@VLSD	001	0001	0971	
#CNDIS	001	0001	0940	
#CNFIG	001	0005	0976	
#CORSV	001	0010	0964	
#DKEXT	001	0002	0947	
#DSPLY	001	0000	0002	
#FIGSC	001	0001	0977	
#HISCT	001	0006	0954	
#HISDX	001	0003	0949	
#HISLN	001	0008	0946	0947 1412 1412
#HISN1	001	0003	0952	
#HISN2	001	0005	0953	
#HISTC	001	0007	0956	
#HISTN	001	0009	0958	
#HISTQ	001	0000	0950	
#HISTR	001	0001	0951	
#HISTS	001	0008	0957	
#HISTV	001	000F	0959	
#HSEND	001	0007	0955	
#HSENT	001	0001	0948	
#IOSDR	001	0019	0975	
#MVSDR	001	000D	0972	
#NEROV	001	009C	0966	
#OBRAD	001	001D	0968	
#PKCNT	001	0002	0933	
#PKMRW	001	002B	0934	
#PKRDD	001	0003	0931	
#PKRTD	001	0003	0930	
#PKRTL	001	0004	0937	
#PKVRD	001	000B	0935	
#PKVWD	001	0007	0936	
#PKWTD	001	0001	0932	
#PTFDA	001	00DC	0986	
#RDWTL	001	0004	0938	
#SDRDK	001	0011	0974	
#VLSDR	001	000C	0970	
#VLTBE	001	0008	0925	
#VOLF1	001	0009	0978	
#VOLNG	001	0006	0923	0925 0947
#VOLOC	001	0005	0924	
#VOLR1	001	0008	0979	
#VTCF1	001	0025	0982	
#VTCF2	001	0027	0984	
#VTCR1	001	0024	0981	
#VTCR2	001	0026	0983	

CROSS REFERENCE															
SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00 03/06/22 PAGE 47										
@ALTFL	001	0001	0254												
@ARR	001	0008	0018	1176	1267*	1268	1269*	1270	1347	1436					
@ASIGN	001	007C	0073												
@ASTER	001	005C	0071												
@BCRDL	001	0050	0090												
@BE	001	0081	0045												
@BF	001	0090	0054												
@BH	001	0084	0043												
@BKSPC	001	0010	0351	1295											
@BL	001	0082	0044												
@BLANK	001	0040	0067	1356	1396	1478									
@BM	001	0082	0056												
@BNE	001	0001	0048												
@BNH	001	0004	0046												
@BNL	001	0002	0047												
@BNM	001	0002	0059												
@BNOL	001	0020	0052												
@BNOZ	001	0008	0051												
@BNP	001	0004	0058												
@BNZ	001	0001	0060												
@BOL	001	00A0	0050												
@BOZ	001	0088	0049												
@BP	001	0084	0055												
@BR	001	0001	0015	1171	1173	1174*	1175	1176	1179	1183	1186*	1197	1199	1200	1201
				1202	1203	1204	1205	1206	1207	1208	1210	1212	1213	1214	1215
				1216	1220	1221	1222	1223	1224	1256	1262	1264*	1266	1267	1268
				1269	1270	1272	1273	1276	1278	1282	1285	1289	1291	1293	1295
				1297	1297	1298	1301*	1345	1347	1348	1350	1351	1353	1354	1354
				1355	1359	1363	1365	1366	1370	1371	1371	1373	1373	1374	1376
				1376	1378	1378	1379	1380	1380	1381	1385	1386	1390	1391	1392
				1394	1394	1395	1397	1398	1401	1402	1404	1404	1407	1410	1411
				1412	1416	1416	1417	1417	1422	1424	1434	1438	1440*	1447	1448
				1449	1450	1451	1454	1456	1459	1461	1466	1468	1472	1474	1475
				1475	1476	1476	1477	1480	1480	1481	1484	1486	1489*		
@BT	001	0010	0053												
@BZ	001	0081	0057												
@BZ37B	001	00F2	0364												
@B1	001	0001	0065												
@CADDR	001	0002	0144	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1212	1213
				1214	1215	1216	1220	1221	1222	1223	1224	1297	137		

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@CKY09	001	0009	0320	
@CKY10	001	000A	0321	
@CKY11	001	000B	0322	
@CKY12	001	000C	0323	1330 1333 1472 1486
@CKY13	001	000D	0324	1334 1468
@CKY14	001	000E	0325	1335 1461
@CKY15	001	000F	0326	1336 1456
@CKY16	001	0010	0327	1337 1451
@CLOFF	001	0010	0096	
@CLON	001	0011	0095	
@CMLON	001	0001	0330	1447* 1448* 1449* 1450*
@CMOFF	001	0000	0329	1454* 1459* 1466*
@COMMA	001	006B	0068	
@CPLUS	001	004E	0081	
@CP37B	001	0004	0391	
@CRERR	001	0090	0346	1279 1420
@CRPRY	001	0004	0350	
@CRTDS	001	0092	0343	1274 1308 1410 1415
@CRTQ	001	0090	0345	1182 1273* 1411 1414
@CURSR	001	0040	0347	1299 1349 1358 1383 1485
@DADDR	001	0002	0142	
@DBFR1	001	0004	0131	
@DBFR2	001	0005	0132	
@DBUSY	001	0002	0248	
@DCALK	001	0001	0083	
@DCBCY	001	0009	0117	
@DCBT1	001	0050	0119	
@DCFLN	001	0004	0232	
@DCNT	001	0003	0130	
@DCRID	001	0001	0246	
@DCST1	001	0040	0118	
@DCTRL	001	0000	0127	
@DCTRW	001	0000	0245	
@DCWID	001	0001	0242	
@DCYL	001	0001	0128	
@DCYMV	001	0001	0233	
@DD2	001	0003	0032	
@DEFLG	001	0002	0255	
@DERCE	001	0020	0285	
@DERD2	001	0008	0277	
@DEREQ	001	0010	0276	
@DERIN	001	0040	0274	
@DERMA	001	0020	0275	
@DERNR	001	0004	0278	
@DERR	001	0000	0249	
@DERSC	001	0001	0280	
@DERTC	001	0002	0279	
@DFCR	001	0006	0235	
@DFDR	001	0004	0236	
@DGET	001	0001	0136	
@DHARD	001	0000	0263	
@DLNCT	001	000F	0349	1351 1390
@DLNLG	001	0040	0348	1319 1320 1352 1352 1352* 1356* 1357 1357 1357* 1396* 1397 1397 1397* 1496 1497 1498 1499 1500 1501 1502 1503 1504 1505 1506
@DOLAR	001	005B	0070	1507 1508 1509 1510

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@DOP2	001	0004	0030	1371* 1398* 1402*
@DPLNG	001	0006	0134	1277 1278 1278
@DPOS	001	0000	0135	
@DPUT	001	0002	0137	
@DREAD	001	0001	0239	
@DSAD	001	0002	0129	
@DSBCY	001	0004	0108	
@DSBSY	001	0092	0344	1179 1272
@DSCS1	001	0000	0109	
@DSEEK	001	0000	0238	
@DSIVF	001	0003	0140	
@DSPIN	001	0002	0133	
@DTRSZ	001	0018	0087	
@DUNSF	001	0080	0281	
@DVBCY	001	0007	0110	
@DVERY	001	0003	0244	
@DVRFY	001	0031	0138	
@DVST1	001	0002	0250	
@DVST2	001	0003	0251	
@DWAIT	001	00FF	0139	
@DWBCY	001	0005	0105	
@DWRTT	001	0002	0240	
@DWSIZ	001	00C0	0107	
@DWTB1	001	0003	0106	
@DZERO	001	00F0	0066	
@D1	001	0002	0028	1183*
@EOF	001	001C	0079	
@EOFTC	001	0075	0164	
@EOS	001	001E	0078	
@ER37B	001	00F0	0365	
@FDDBC	001	0000	0197	
@FDE1	001	000C	0202	
@FDFNA	001	000B	0200	
@FDHLN	001	0002	0210	
@FDLNC	001	0002	0195	
@FDNSC	001	0003	0212	
@FDSD	001	0000	0208	
@FLACE	001	0009	0199	
@FLDBC	001	0001	0198	
@FLDIN	001	0012	0337	
@FLENT	001	0004	0203	
@FLFNA	001	0002	0201	
@FLHLN	001	0002	0211	
@FLLNC	001	0002	0196	
@FLNSC	001	0001	0213	
@FLSD	001	0001	0209	
@HCEPK	001	003C	1021	
@HCOPS	001	001C	1028	
@HCOPY	001	081C	1023	
@HCRHE	001	7858	1044	
@HDNRY	001	1008	1009	
@HDRHE	001	7854	1042	
@HDRLN	001	0007	0094	0863
@HDRV1	001	7840	1034	
@HDRV2	001	7844	1036	
@HDTRD	001	1040	1005	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@HDTRJ	001	1010	1007	
@HERPG	001	087C	1011	
@HFEHT	001	0804	1026	
@HIPLE	001	006C	1018	
@HKBER	001	2040	1001	
@HKBHE	001	7848	1038	
@HLOGE	001	1844	1013	
@HPRER	001	0070	1003	
@HPRHE	001	784C	1040	
@HSTAD	001	0009	0261	
@HSTEN	001	0007	0260	
@HSTPE	001	0006	0259	
@HSTQR	001	0001	0257	
@HSTSN	001	0005	0258	
@HSTVI	001	000F	0262	
@HUNSF	001	1850	1016	
@IAR	001	0010	0019	
@ID37B	001	0040	0401	
@INDEX	001	0001	0158	0159
@INST3	001	0003	0034	
@INST4	001	0004	0035	
@INST5	001	0005	0036	
@INST6	001	0006	0037	
@IP37B	001	00C0	0400	
@I1IAR	001	00C0	0022	
@KCMDK	001	0020	0311	
@KELOK	001	001B	0310	
@KENAB	001	001E	0308	
@KEXIT	001	001F	0309	
@KEYBD	001	0010	0328	1447* 1448* 1449* 1450* 1454* 1459* 1466*
@KFUNK	001	0010	0331	
@KHARD	001	0011	0336	
@KLEAR	001	000D	0332	
@LINSZ	001	00F4	0086	0837
@LO37B	001	00F0	0369	
@MAPEN	001	0005	0091	
@MINCR	001	2000	0085	
@MINUS	001	0060	0082	
@NOP	001	0080	0042	1259
@NORFL	001	0000	0256	
@NTRDY	001	00A0	0393	
@NUMBR	001	007B	0072	
@OPD2	001	0004	0031	
@OP1	001	0003	0029	1175* 1176* 1262* 1266* 1268* 1270* 1347* 1436* 1438* 1442*
@OP2	001	0005	0033	
@OVRUN	001	0004	0286	
@PBUSY	001	00E2	0298	
@PCAR	001	00E6	0295	
@PCNT	001	0003	0230	
@PCTRL	001	0000	0151	1282 1289 1291 1295 1365
@PCYL	001	0001	0228	
@PC37B	001	00F2	0385	
@PDAR	001	00E4	0294	
@PDATA	001	0003	0153	1276 1276* 1371 1380* 1398
@PD37B	001	0080	0399	
@PERR	001	00E0	0301	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@PFLAG	001	0000	0227	
@PFORM	001	00E1	0299	
@PGCSZ	001	0020	0084	0085
@PLITE	001	00E2	0300	
@PLNGH	001	0004	0291	1276
@PMGCK	001	0020	0302	
@PN37B	001	00F0	0384	
@PPLNG	001	0004	0150	
@PRCNT	001	0001	0152	1376* 1404*
@PRETR	001	00C0	0156	
@PRINT	001	0040	0154	0156 1289
@PRITY	001	0080	0335	
@PSAD	001	0002	0229	
@PSIOQ	001	00E0	0297	
@PSIOR	001	0000	0296	
@PSNSQ	001	00E2	0303	
@PSR	001	0004	0017	
@PWAIT	001	00FF	0160	1365
@P1IAR	001	0020	0020	
@P2IAR	001	0040	0021	
@Q	001	0001	0026	1259* 1285*
@RD37B	001	00F1	0379	
@REGL	001	0002	0014	1411*
@RETRN	001	0080	0155	0156 1291
@RLDWN	001	004F	0161	1282
@RTCNT	001	0003	0293	
@RTRNC	001	0080	0163	
@RT37B	001	0005	0392	
@SBLN	001	0005	0172	
@SBLNL	001	0002	0186	
@SCTSΖ	001	0100	0102	
@SDFLN	001	0007	0092	
@SDF0	001	0000	0168	
@SDF1	001	0001	0169	
@SDF2	001	0002	0170	
@SDF3	001	0003	0171	
@SECCY	001	0030	0088	
@SIST	001	0001	0183	
@SKCTL	001	0000	0243	
@SLASH	001	0061	0069	
@SLAST	001	0002	0185	
@SMIDL	001	0003	0184	
@SNSB0	001	0000	0267	
@SNSB1	001	0001	0268	
@SNSB2	001	0002	0269	
@SNSB3	001	0003	0270	
@SNULL	001	0080	0175	
@SN37B	001	00F2	0373	
@SONLY	001	0000	0182	
@SPINA	001	00A0	0252	
@SPINB	001	00B0	0253	
@STEXT	001	0007	0174	
@STYPE	001	0006	0173	
@SYCNT	001	0002	0292	
@TBCNT	001	0000	0162	
@TBLEF	001	0010	0157	0159

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@TBLIX	001	0011	0159	
@TJ37B	001	0040	0390	
@TYPAM	001	0002	0334	
@TYPO	001	001C	0333	
@UCB	001	0087	0041	1284 1285
@UPARW	001	005A	0080	
@VADDR	001	0002	0143	
@VENTA	001	0056	0115	
@VMDDV	001	00FE	0116	
@VMFD1	001	0000	0111	
@VMFD2	001	0001	0112	
@VMRS3	001	0002	0114	
@VMTRL	001	0001	0113	
@VOLID	001	0006	0093	
@VQ	001	0001	0027	
@WA37B	001	00FF	0398	
@WSFIT	001	0500	0103	
@WSTBL	001	0503	0104	
@XR	001	0002	0016	1175 1185* 1197* 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1210* 1212 1213 1214 1215 1216 1218* 1219 1220 1221 1222 1223 1224 1266 1275* 1276 1298* 1299 1300 1302* 1348* 1349 1350* 1352 1352 1353* 1356 1357 1357 1358 1359 1370* 1372 1383 1391* 1392* 1396 1397 1400 1401* 1442 1477* 1478 1479 1479 1484*
@ZERO	001	0000	0064	1300 1360 1474
@4K	001	0010	0352	1177 1192
DSBASE	004	2924	1306	1256 1264 1345 1363 1434 1440
DSBFEN	001	2FC1	1510	1326 1511
DSBUFA	002	2997	1324	1273 1325 1350 1475
DSCNTC	002	299E	1331	1416* 1417*
DSCNTR	001	298D	1318	1351* 1354* 1390* 1394*
DSCO01	UNDEFINED	SYMBOL		1402
DSCPOS	002	298C	1316	1297* 1298 1317 1348 1359* 1370 1373* 1378 1484
DSC001	002	2985	1312	1267 1269 1297 1354 1373 1374 1376 1380 1394 1401 1404 1417 1480
DSC064	002	298F	1319	1353
DSDOWN	001	2A48	1409	1279
DSD100	004	2A61	1417	1418
DSD150	004	2A70	1423	1420
DSEND8	002	2999	1326	1327 1378
DSENSE	002	2981	1310	1410* 1411*
DSHIST	001	297E	1307	1412
DSINCT	001	29A6	1339	1474* 1480* 1481
DSINDX	001	29A9	1346	1293 1379
DSINIT	001	29A5	1338	1475* 1476* 1477
DSI010	004	29B8	1352	1355
DSI050	004	29D7	1361	1347*
DSLSE	001	2800	1172	1171 1190 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1210 1212 1213 1214 1215 1216 1220 1221 1222 1223 1224 1257
DSLBSL	001	0100	1169	1194
DSLBSX	001	3900	1190	1191
DSL4K	001	2835	1192	
DSLFR	002	2837	1193	1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1212 1213 1214 1215 1216 1220 1221 1222 1223 1224
DSLINA	001	2D41	1500	1501
DSLINB	001	2D01	1499	1500

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
DSLINC	001	2CC1	1498	1499
DSLIND	001	2C81	1497	1498
DSLINF	001	2C41	1496	1497
DSLINF	001	2C01	1495	1324 1496
DSLIN1	001	2F81	1509	1316 1510
DSLIN2	001	2F41	1508	1328 1509
DSLIN3	001	2F01	1507	1508
DSLIN4	001	2EC1	1506	1507
DSLIN5	001	2E81	1505	1506
DSLIN6	001	2E41	1504	1505
DSLIN7	001	2E01	1503	1504
DSLIN8	001	2DC1	1502	1503
DSLIN9	001	2D81	1501	1502
DSLIS1	001	2987	1314	1276* 1278 1282 1287 1289 1291 1295 1365 1371 1376* 1380* 1398 1404*
DSL1A	002	299B	1328	1329 1391
DSL050	003	2815	1179	
DSL052	003	281B	1182	1179
DSL053	005	281E	1183	1180
DSL055	004	2823	1184	1183*
DSL090	004	2827	1185	1175*
DSL100	004	282F	1187	1176*
DSL200	001	283A	1196	1178
DSL256	002	2839	1194	1210
DSNO64	002	2991	1320	
DSNO64	UNDEFINED SYMBOL			1392
DSPADD	002	2993	1321	1322
DSPCMD	001	2B00	1435	1218 1219
DSPICT	001	299F	1332	1416
DSPK12	001	29A0	1333	
DSPK13	001	29A1	1334	1447
DSPK14	001	29A2	1335	1448 1466
DSPK15	001	29A3	1336	1449 1459
DSPK16	001	29A4	1337	1450 1454
DSPLYA	002	2834	1191	1197
DSPLYN	001	2904	1261	1321
DSPPRO	002	29A8	1342	1476
DSPRNT	002	2995	1323	
DSPSNS	001	299C	1330	1451 1456 1461 1468 1472 1486*
DSPYMP	001	2900	1258	1198
DSP005	001	0005	1343	1481
DSP010	003	2B30	1456	1452
DSP020	003	2B3D	1461	1457
DSP030	003	2B51	1468	1462 1464
DSP040	003	2B5F	1472	1445 1469
DSP050	004	2B6C	1476	1482
DSP080	003	2B8B	1486	1473
DSP090	004	2B8E	1488	1442*
DSP095	004	2B92	1489	1438*
DSP100	004	2B96	1490	1436*
DSP192	001	00C0	1341	1342
DSP193	001	00C1	1340	1479
DSP290	001	2B84	1483	
DS0005	001	2903	1260	1199*
DS0010	001	2907	1263	1200*
DS0020	001	290B	1265	1201*

CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 03/06/22 PAGE 54

DS0025	001	293A	1280	1202*					
DS0030	001	294F	1288	1203*					
DS0050	004	2924	1275	1268*	1272	1306			
DS0052	003	293E	1282	1281	1422				
DS0053	003	2944	1284	1259*	1285*				
DS0055	003	2950	1289	1284					
DS0060	003	2956	1291	1385					
DS0065	003	295C	1293	1386					
DS0070	003	295F	1295	1204*	1292				
DS0080	002	2993	1322	1205*					
DS0090	002	2997	1325	1206*					
DS0100	004	2972	1301	1207*	1262*	1296	1366	1407	1424
DS0110	004	2976	1302	1208*	1266*				
DS0120	004	297A	1303	1270*					
DS0130	001	2A2E	1399	1212*					
DS0140	001	2A3B	1403	1213*					
DS0150	001	2A44	1406	1214*					
DS0200	001	29DB	1364	1290					
DS0210	003	29E1	1370	1381					
DS0215	005	29E8	1372	1371*					
DS0220	003	2A0B	1383	1377					
DS0240	001	2A68	1419	1215*					
DS0250	003	2A14	1390	1216*	1283				
DS0260	003	2A1A	1392	1220*	1395				
DS0270	005	2A30	1400	1221*	1402*	1405			
DS0275	001	2B0B	1441	1222*					
DS0280	001	2B0F	1443	1223*					
DS0290	UNDEFINED	SYMBOL		1224*					

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 21

OL LEN VALUE DEFN REFERENCES VER 15, MOD 00 03/06/22 PAGE 54

DS0010	001	2907	1263	1200*					
DS0020	001	290B	1265	1201*					
DS0025	001	293A	1280	1202*					
DS0030	001	294C	1288	1203*					
DS0050	004	2924	1275	1268*	1272	1306			
DS0052	003	293E	1282	1281	1422				
DS0053	003	2944	1284	1259*					
DS0055	003	294D	1289	1284					
DS0060	003	2953	1291	1385					
DS0065	003	2959	1293	1386					
DS0070	003	295C	1295	1204*	1292				
DS0080	002	298D	1322	1205*					
DS0090	002	2991	1325	1206*					
DS0100	004	296C	1301	1207*	1262*	1296	1366	1407	1424
DS0110	004	2970	1302	1208*	1266*				
DS0120	004	2974	1303	1270*					
DS0130	001	2A28	1399	1212*					
DS0140	001	2A35	1403	1213*					
DS0150	001	2A3E	1406	1214*					
DS0200	001	29D5	1364	1290					
DS0210	003	29DB	1370	1381					
DS0215	005	29E2	1372	1371*					
DS0220	003	2A05	1383	1377					
DS0240	001	2A62	1419	1215*					

DS0250 003 2A0E 1390 1216* 1283
DS0260 003 2A14 1392 1220* 1395
DS0270 005 2A2A 1400 1221* 1402* 1405
DS0275 001 2B0B 1441 1222*
DS0280 001 2B0F 1443 1223*
DS0290 UNDEFINED SYMBOL 1224*
OXR UNDEFINED SYMBOL 1198

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 47