

SYNCHRONOUS LINE CONTROL (SLC) LOGICAL DRIVER
(24307B - REV. 1438)

BINARY TAPE	24307-16010
SOURCE TAPES	24307-18062
	24307-18063
	24307-18064
	24307-18065
	24307-18066
	24307-18067
SOURCE LISTING	24307-19006

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0001

★★ NO ERRORS★

ASMB,R,B,L,C *** SLC ***

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0001          ASMB,R,B,L,C *** SLC ***
0003 00000          NAM SLC,6
0004          ENT SLC          LOGICAL INIT ROUTINE
0005          EXT ,ENTR
0006          EXT EXEC
0007*
0008*      SUBROUTINE SLC:  LOGICAL INITIALIZATION ROUTINE FOR SLC
0009*          JSB SLC
0010*          DEF ++3
0011*          DEF LU          LOGICAL UNIT NUMBER
0012*          DEF BUFFER      EQT EXTENSION
0013*
0014 00000 000000 LU      OCT 0          PTR TO LOGICAL UNIT NUMBER
0015 00001 000000 EQTXP OCT 0          ADDR OF EQT EXTENSION BUFFER
0016*
0017 00002 000000 SLC      NOP
0018 00003 016001X      JSB ,ENTR          PROCESS PARAMETERS
0019 00004 000000R      DEF LU
0020 00005 066001R      LDB EQTXP          GET ADDR OF EQTX
0021 00006 044057      ADB ,4          B = EQT22 ADDR
0022 00007 062137R      LDA ,SLCR
0023 00010 170001      STA B,I          SET UP SLC READ ADDR
0024 00011 006004      INB
0025 00012 062140R      LDA ,SLCW
0026 00013 170001      STA B,I          SET UP SLC WRITE ADDR
0027 00014 006004      INB
0028 00015 062136R      LDA ,SLCC
0029 00016 170001      STA B,I          SET UP SLC CONTROL ADDR
0030 00017 006004      INB
0031 00020 062143R      LDA SPCTA          PUT SPEC CHAR TABLE ADDR
0032 00021 170001      STA B,I          IN EQT 25
0033 00022 044046      ADB M5          B = EQTX3 ADDR (SYNC)
0034 00023 160001      LDA B,I          GET SPECIFIED SYNC CHAR
0035 00024 044071      ADB ,31          B = EQTX WORD 34 ADDR
0036 00025 052165R      CPA ECCT+1      EBCDIC SYNC CHAR?
0037 00026 026044R      JMP EBDIC      YES
0038 00027 052146R      CPA ACCT+1      ASCII SYNC CHAR?
0039 00030 026033R      JMP ASCII      YES
0040 00031 002404      CLA,INA          NO, SET A+REG =1 AS AN ERROR IND
0041 00032 126002R      JMP SLC,I      & RETURN, BYPASSING EXEC CALL
0042*
0043 00033 062150R ASCII LDA ACCT+3
0044 00034 170001      STA B,I          SET MAX (LARGEST) CONTROL CHAR
0045 00035 044057      ADB ,4          B = EQTX WORD 38 DATA
0046 00036 062141R      LDA ACCTA
0047 00037 170001      STA B,I          SET UP TRANSM CODE TABLE ADDR
0048 00040 046133R      ADB ,23          B = EQTX WORD 61 ADDR
0049 00041 160001      LDA B,I          GET ENVIR
0050 00042 033043R      IOR H4000      SET BIT 14 FOR ASCII
0051 00043 026054R      JMP TCSET
0052 00044 062174R EBDIC LDA ECCT+8
0053 00045 170001      STA B,I          SET MAX (LARGEST) CONTROL CHAR
0054 00046 044057      ADB ,4          B = EQTX WORD 38 DATA
0055 00047 062142R      LDA ECCTA
0056 00050 170001      STA B,I          SET UP TRANSM CODE TABLE ADDR
0057 00051 046133R      ADB ,23          B = EQTX WORD 61 ADDR

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0058	00052	160001		LDA B,I	GET ENVIR
0059	00053	013252R		AND H8FFF	CLEAR BIT 14 FOR EBCDIC
0060	00054	170001	TCSET	STA B,I	& SAVE ENVIR
0061	00055	046135R		ADB M29	B = EQTX WORD 32 ADDR
0062	00056	002020		SSA	CRC TO BE USED (B15 =0)?
0063	00057	026124R		JMP ULRC	NO
0064	00060	060074		LDA B377	
0065	00061	170001		STA B,I	SET UP 8-BIT MASK
0066	00062	047045R		ADB M30	B = EQTX WORD 2 ADDR
0067	00063	160001		LDA B,I	GET EQTX2
0068	00064	010040		AND M64	MASK OUT PARITY & CHAR SIZE
0069	00065	030063		IOR .8	SPEC NO PARITY & 8-BIT BYTE
0070	00066	170001	X2SET	STA B,I	
0071	00067	062001R		LDA EQTXP	A = ADDR OF EQTX
0072	00070	042134R		ADA .61	A = ADDR 0 CHAR TRACE LENGTH
0073	00071	160000		LDA A,I	
0074	00072	042761R		ADA EFIXL	
0075	00073	040056		ADA .3	
0076	00074	003004		CMA,INA	A = EQTX LENGTH - (FIXED LENGTH
0077	00075	142001R		ADA EQTXP,I	+ CHAR TRACE +3)
0078	00076	032020		SSA	EVENT TRACE LENGTH > 2?
0079	00077	026031R		JMP ASCII-2	NO, ERROR: BYPASS EXEC CALL
0080	00100	162000R		LDA LU,I	GET LOG UNIT #
0081	00101	030067		IOR B100	SET FUNCTION CODE =1 (INITLIZE)
0082	00102	072000R		STA LU	
0083	00103	016002X		JSB EXEC	MAKE CONTROL (INITIALIZE) REQ
0084	00104	000111R		DEF **5	
0085	00105	000056		DEF .3	SPECIFY CONTROL
0086	00106	000000R		DEF LU	CONTROL WORD: FUNCTION & LU
0087	00107	000053		DEF .0	DUMMY PARAM
0088	00110	100001R		DEF EQTXP,I	EQT EXTENSION BUFFER
0089	00111	062001R		LDA EQTXP	A =ADDR OF EQTX
0090	00112	042761R		ADA EFIXL	A =ADDR OF TRACE TABLE
0091	00113	070001		STA B	
0092	00114	006004		INB	INIT WORD 1 OF 1ST ENTRY
0093	00115	174000		STB A,I	IN TRACE TABLE
0094	00116	044051		ADB M2	B =ADDR OF TRACE TABLE -1
0095	00117	170001		STA B,I	INIT OLDEST ENTRY ADDR
0096	00120	044052		ADB M1	B =ADDR OF TRACE TABLE -2
0097	00121	170001		STA B,I	INIT NEWEST ENTRY ADDR
0098	00122	002400		CLA	SET A =0 TO IND A GOOD REQ
0099	00123	126002R		JMP SLC,I	RETURN
0100*					
0101	00124	060073	ULRC	LDA B177	HERE IF USING LRC
0102	00125	170001		STA B,I	SET UP 7-BIT MASK
0103	00126	047045R		ADB M30	B = EQTX WORD 2 ADDR
0104	00127	160001		LDA B,I	GET EQTX2
0105	00130	010040		AND M64	MASK OUT PARITY & CHAR SIZE
0106	00131	032133R		IOR .23	SPEC ODD PARITY & 7-BIT BYTE
0107	00132	026066R		JMP X2SET	
0108*					
0109	00133	000027	.23	DEC 23	DEC 23, OCT 27
0110	00134	000075	.61	DEC 61	
0111	00135	177743	M29	DEC -29	
0112	00040		M64	EQU 40B	OCT 177700, DEC -64
0113	00136	000203R	.SLCC	DEF SLCC	ADDR OF SLC CONTROL ROUTINE

0114	00137	000363R	,SLCR DEF	SLCR	READ ROUTINE
0115	00140	000407R	,SLCW DEF	SLCW	WRITE ROUTINE
0116	00141	000145R	ACCTA DEF	ACCT	ASCII CONTROL CCHAR TABLE ADDR
0117	00142	000164R	ECCTA DEF	ECCT	EBCDIC ONTROL CCHAR TABLE ADDR

0119	00143	000144R	SPCTA DEF	++1	SPECIAL CHAR TABLE ADDR
0120	00144	177742	DEC	-30	NO. OF SPECIAL CHARS

0121*					
0122*			ASCII CONTROL CHARACTERS		
0123	00145	000020	ACCT	DEC 16	DLE
0124	00146	000026		DEC 22	SYN
0125	00147	000002		DEC 2	STX
0126	00150	000037		DEC 31	ITB
0127	00151	000001		DEC 1	SOH
0128	00152	000027		DEC 23	ETB
0129	00153	000003		DEC 3	ETX
0130	00154	000004		DEC 4	EOT
0131	00155	000025		DEC 21	NAK
0132	00156	000005		DEC 5	ENQ
0133	00157	000074		OCT 74	RVI (WITH DLE)
0134	00160	000073		OCT 73	WAK (WITH DLE)
0135	00161	000061		OCT 61	AK1 (WITH DLE)
0136	00162	000060		OCT 60	AK0 (WITH DLE)
0137	00163	000177		OCT 177	7-BIT PAD

0138*					
0139*			EBCDIC CONTROL CHARACTERS		
0140	00164		ECCT	EQU +	
0141	00164	000020	DLE	DEC 16	DLE
0142	00165	000062		DEC 50	SYN
0143	00166	000002	STX	DEC 2	STX (BOTH EBCDIC & ASCII)
0144	00167	000037		DEC 31	ITB
0145	00170	000001		DEC 1	SOH
0146	00171	000046		DEC 38	ETB
0147	00172	000003		DEC 3	ETX
0148	00173	000067		DEC 55	EOT
0149	00174	000075		DEC 61	NAK
0150	00175	000055		DEC 45	ENQ
0151	00176	000174		OCT 174	RVI (WITH DLE)
0152	00177	000153		OCT 153	WAK (WITH DLE)
0153	00200	000141		OCT 141	AK1 (WITH DLE)
0154	00201	000160		OCT 160	AK0 (WITH DLE)
0155	00202	000377		OCT 377	8-BIT PAD

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0157*          SLC CONTROL ROUTINE FOR LOGICAL DRIVER
0158*
0159 00203 000000 SLCCL NOP
0160 00204 077263R STB PHB          SAVE B-REG
0161 00205 066203R LDB SLCC          GET RETURN ADDRESS
0162 00206 016607R JSB SETUP        SET UP RETURN ADDR & PTRS
0163 00207 067263R LDB PHB          GET B-REG FROM PHYSICAL
0164 00210 006021 SSB,RSS          IS THIS A NEW REQUEST (B NEG)?
0165 00211 026315R JMP SLCER        NO, ERROR
0166 00212 067247R LDB B300        SPECIFY CONTROL; REQ CODE OFFSET
0167 00213 017167R JSB TRAIN        GET FUNCTION & INIT TRACE ENTRY
0168 00214 050054 CPA ,1           INITIALIZE?
0169 00215 026244R JMP CF01        YES
0170 00216 050055 CPA ,2           LINE OPEN?
0171 00217 026251R JMP CF02        YES
0172 00220 050056 CPA ,3           LINE CLOSE?
0173 00221 026251R JMP CF02        YES
0174 00222 043261R ADA M32        SUBTRACT OCT 40 FROM FUNCTION
0175 00223 002003 SZA,RSS          ESTABLISH LOCAL ID SEQUENCE?
0176 00224 026253R JMP CF40        YES
0177 00225 050054 CPA ,1           ESTABLISH LIST OF REMOTE IDS?
0178 00226 026264R JMP CF41        YES
0179 00227 050055 CPA ,2           CHANGE ERROR RECOVERY PARAMS?
0180 00230 026273R JMP CF42        YES
0181 00231 050056 CPA ,3           ZERO THE LONG TERM STATISTICS?
0182 00232 026303R JMP CF43        YES
0183 00233 050057 CPA ,4           SPECIAL SHIFT TO READ STATE?
0184 00234 026305R JMP CF44        YES
0185 00235 050060 CPA ,5           DISABLE AUTOMATIC NAK SENDING?
0186 00236 026312R JMP CF45        YES
0187 00237 002021 SSA,RSS          FUNCTION BELOW 40?
0188 00240 026315R JMP SLCER        NO,ERROR
0189 00241 002400 CLA              YES
0190 00242 006400 CLB
0191 00243 127047R JMP PRET,I      LET PHYSICAL (P+2) LOOK AT FUNCT
0192*
0193 00244 002400 CF01 CLA          SET STATE = 0 (UNOPENED)
0194 00245 173302R STA STATE,I
0195*
0196*          -----
0197*          COMPLETE "CONTINUATION" RETURN TO PHYSICAL
0198 00246 063047R SLCPC LDA PRET        SPECIFY CONTINUATION
0199 00247 006400 CLB              & COMP STATUS = 0 = OK
0200 00250 026321R JMP SLCXT+2
0201*
0202 00251 040051 CF02 ADA M2        GET EVENT NO. (0 OR 1)
0203 00252 026450R JMP SEA        GO TO STATE-EVENT-ACTION CIRCLE
0204 00253 163273R CF40 LDA IDFLS,I  GET ID FLAG/COUNT WORD
0205 00254 001727 ALF,ALF          MOVE OLD SEND-FLAG TO RT. HALF
0206 00255 013254R AND HFF00      ZERO OLD FLAG
0207 00256 130214 IOR EQT10,I      & MERGE IN NEW FLAG
0208 00257 001727 ALF,ALF          MOVE SEND-FLAG TO LEFT HALF
0209 00260 173273R STA IDFLS,I
0210 00261 160215 LDA EQT11,I  GET ID-SEQ ADDR (REGARDLESS)
0211 00262 173301R STA SIDAD,I
0212 00263 026317R JMP SLCXT      EXIT WITH STATUS =OK

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0213	00264	163273R	CF41	LDA IDFLS,I	GET ID FLAG/COUNT WORD
0214	00265	013254R		AND HFF00	ZERO OLD FLAG
0215	00266	130214		IOR EQT10,I	& MERGE IN NEW FLAG
0216	00267	173273R		STA IDFLS,I	
0217	00270	160215		LDA EQT11,I	GET ID-SEQ ADDR (REGARDLESS)
0218	00271	173300R		STA RIDAD,I	& SAVE
0219	00272	026317R		JMP SLCXT	EXIT WITH STATUS =OK
0220	00273	160214	CF42	LDA EQT10,I	GET SPECIFIED # OF RETRIES
0221	00274	003004		CMA,INA	MAKE NEG
0222	00275	173062R		STA NTRY,I	& SAVE
0223	00276	160215		LDA EQT11,I	GET ADDR, THEN
0224	00277	160000		LDA A,I	# OF 3-SEC PERIODS IN LTO
0225	00300	003004		CMA,INA	MAKE NEG
0226	00301	173274R		STA NLTO,I	& SAVE
0227	00302	026317R		JMP SLCXT	EXIT WITH STATUS =OK
0228	00303	017224R	CF43	JSB ZSTAT	ZERO THE LONG TERM STATISTICS
0229	00304	026317R		JMP SLCXT	EXIT WITH STATUS =OK
0230	00305	060060	CF44	LDA ,5	
0231	00306	173302R		STA STATE,I	SET STATE =5 (READ STATE)
0232	00307	002404		CLA,INA	
0233	00310	173061R		STA MPFLS,I	SET CONTACT-MADE FLAG, CLR REST
0234	00311	026317R		JMP SLCXT	EXIT WITH STATUS =OK
0235	00312	163061R	CF45	LDA MPFLS,I	
0236	00313	030057		IOR ,4	SET BIT 2: DISABLE NAK SENDING
0237	00314	026310R		JMP CF45=2	
0238*					
0239	00315	006404	SLCER	CLB,INB	COMP STATUS =INVALID REQUEST =1
0240	00316	026320R		JMP SLCXT+1	
0241*					
0242*					COMPLETION RETURN TO PHYSICAL
0243*					
0244	00317	006400	SLCXT	CLB	COMPLETION STATUS =OK =0
0245	00320	063050R		LDA PRETF	SPECIFY COMPLETION
0246	00321	073264R		STA PRETV	& SET UP RETURN
0247	00322	163061R		LDA MPFLS,I	
0248	00323	010050		AND M3	CLEAR SEND-CONTINUE FLAG (BIT 1)
0249	00324	173061R		STA MPFLS,I	
0250	00325	163265R		LDA ET04,I	
0251	00326	013254R		AND HFF00	MASK OUT OLD COMP STATUS
0252	00327	030001		IOR B	& PUT NEW ONE
0253	00330	167766R		LDB BLKSP,I	PLUS THE BLOCK SPEC BITS
0254	00331	005700		BLF	(MOVED TO BITS 7-5)
0255	00332	005222		RBL,RBL	
0256	00333	006011		SLB,RSS	IS THIS A WRITE REQ?
0257	00334	030001		IOR B	NO, PUT BLK SPEC INTO STATUS
0258	00335	173265R		STA ET04,I	RIGHT HALF OF EQT 4
0259	00336	167065R		LDB TLOG,I	GET TRANSMISSION LOG
0260	00337	177267R		STB ET14,I	& STORE IN EQT 14
0261*					
0262*					ROUTINE TO COMPLETE TRACE TABLE ENTRY
0263*					
0264	00340	010074		AND B377	
0265	00341	001727		ALF,ALF	MOVE COMPLETION STATUS TO LEFT
0266	00342	167306R		LDB TRNEW,I	B =ADDR OF CURRENT ENTRY WORD 1
0267	00343	017215R		JSB TRINC	GET ADDR OF ENTRY WORD 2
0268	00344	130001		IOR B,I	MERGE IN REQUEST & FUNCTION CODE

0269	00345	170001	STA B,I	& STORE BACK IN WORD 2
0270	00346	167306R	LDB TRNEW,I	
0271	00347	164001	LDB B,I	B = ADDR OF NEXT WORD TO BE FILL
0272	00350	077214R	STB TRTMP	SAVE IT (NOW ADDR OF NEXT ENTRY)
0273	00351	017215R	JSB TRINC	GET ADDR OF WORD AFTER NEXT
0274	00352	074000	STB A	
0275	00353	017143R	JSB TRACE	INIT WORD 1 FOR NEXT ENTRY
0276	00354	167306R	LDB TRNEW,I	B = ADDR OF CURRENT ENTRY WORD 1
0277	00355	063214R	LDA TRTMP	A = ADDR OF NEXT ENTRY WORD 1
0278	00356	170001	STA B,I	RESTORE PTR TO NEXT ENTRY
0279	00357	173306R	STA TRNEW,I	& SET NEXT ENTRY = CURRENT ENTRY
0280	00360	002400	CLA	
0281	00361	006400	CLB	
0282	00362	127264R	JMP PRETV,I	RETURN TO PHYSICAL

0284* SLC READ ROUTINE FOR LOGICAL DRIVER

0285*

0286	00363	000000	SLCR NOP	
0287	00364	077263R	STB PHB	SAVE B-REG
0288	00365	066363R	LDB SLCR	GET RETURN ADDRESS
0289	00366	016607R	JSB SETUP	SET UP RETURN ADDR & PTRS
0290	00367	067263R	LDB PHB	GET B-REG FROM PHYSICAL
0291	00370	006021	SSB,RSS	IS THIS A NEW REQUEST (B NEG)?
0292	00371	026444R	JMP LCONT	NO, CONTINUE READ/WRITE
0293	00372	163062R	LDA NTRY,I	
0294	00373	173063R	STA RTCTR,I	INIT RETRY CTR
0295	00374	137305R	ISZ LTCS,I	INC TOTAL # OF READ REQUESTS
0296	00375	000000	NOP	NULL IN CASE OF ROLLOVER
0297	00376	064067	LDB B100	SPECIFY READ: REG CODE OFFSET
0298	00377	017167R	JSB TRAIN	GET FUNCTION & INIT TRACE ENTRY
0299	00400	002003	SZA,RSS	FUNCTION = 0?
0300	00401	026315R	JMP SLCER	YES, ERROR
0301	00402	050062	CPA .7	FUNCTION = 7?
0302	00403	026315R	JMP SLCER	YES, ERROR
0303	00404	002004	INA	GET EVENT NO. (2 THROUGH 7)
0304	00405	173272R	STA CURRQ,I	SAVE CURRENT READ REQ #
0305	00406	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE

0307* SLC WRITE ROUTINE FOR LOGICAL DRIVER

0308*

0309	00407	000000	SLCW NOP	
0310	00410	077263R	STB PHB	SAVE B-REG
0311	00411	066407R	LDB SLCW	GET RETURN ADDRESS
0312	00412	016607R	JSB SETUP	SET UP RETURN ADDR & PTRS
0313	00413	067263R	LDB PHB	GET B-REG FROM PHYSICAL
0314	00414	006021	SSB,RSS	IS THIS A NEW REQUEST (B NEG)?
0315	00415	026444R	JMP LCONT	NO, CONTINUE READ/WRITE
0316	00416	163062R	LDA NTRY,I	
0317	00417	173063R	STA RTCTR,I	INIT RETRY CTR
0318	00420	063305R	LDA LTCS	A=ADDR OF WORD 1, LONG-TERM STAT

0319	00421	002004	INA	
0320	00422	134000	ISZ A,I	INC TOTAL # OF WRITE REQUESTS
0321	00423	000000	NOP	NULL IN CASE OF ROLLOVER
0322	00424	067246R	LDB B200	SPECIFY WRITE: REQ CODE OFFSET
0323	00425	017167R	JSB TRAIN	GET FUNCTION & INIT TRACE ENTRY
0324	00426	047250R	ADB B2000	SET BIT 10 TO IND WRITE
0325	00427	177766R	STB BLKSP,I	SAVE BLOCK SPEC BITS
0326	00430	006011	SLB,RSS	TRANSPARENT TEXT TO BE SENT?
0327	00431	026435R	JMP ++4	NO
0328	00432	167066R	LDB ENVIR,I	
0329	00433	006020	SSB	LRC SPECIFIED?
0330	00434	026315R	JMP SLCER	YES, ERROR
0331	00435	002003	SZA,RSS	FUNCTION = 07
0332	00436	026315R	JMP SLCER	YES,ERROR
0333	00437	040044	ADA M7	
0334	00440	002021	SSA,RSS	FUNCTION > 67
0335	00441	026315R	JMP SLCER	YES, ERROR
0336	00442	043037R	ADA ,14	GET EVENT NO. (8 THROUGH 13)
0337	00443	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE
0338*				
0339	00444	167057R	LCONT LDB KEY,I	B = ADDR OF EDITOR ENTRY
0340	00445	063262R	LDA PHA	GET A-REG PASSED BY PHYSICAL
0341	00446	124001	JMP B,I	
0342*				
0343	00447	160000	HE000 OCT 160000	OCT 160000

0345* STATE-EVENT-ACTION CIRCLE -- A STATE-TRANSITION PROCESSOR

0346*

0347* CALLING SEQUENCE:

0348* (A) = EVENT #

0349* (P) = JMP SEA

0350* (A) = MESSAGE PROCESSOR FLAGS

0351*

0352	00450	072543R	SEA	STA EVENT	SAVE EVENT #
0353	00451	163276R		LDA PRVST,I	GET PREVIOUS STATES,
0354	00452	010074		AND B377	ISOLATE PREV-1,
0355	00453	001727		ALF,ALF	& MOVE TO LEFT HALF
0356	00454	167302R		LDB STATE,I	GET CURRENT STATE (NOW PREV)
0357	00455	030001		IOR B	MERGE IN PREV STATE
0358	00456	173276R		STA PRVST,I	
0359	00457	046376R		ADB STADT	ADD STATE TABLE BASE, GET ENTRY
0360	00460	074000		STB A	
0361	00461	002004		INA	
0362	00462	160000		LDA A,I	GET ADDR OF NEXT STATE
0363	00463	072545R		STA NEXST	
0364	00464	164001		LDB B,I	GET CLUSTER HEADER ADDR
0365	00465	160001	PCLUS	LDA B,I	GET CLUSTER HEADER
0366	00466	006004		INB	
0367	00467	076541R		STB CLUST	SAVE ADDR OF 1ST CLUSTER WORD
0368	00470	006400		CLB	
0369	00471	101110		RRR B	A = 1ST EVENT IN CLUSTER

0370	00472	005727		BLF, BLF	& B = -1 + LENGTH OF CLUSTER
0371	00473	003004		CMA, INA	
0372	00474	042543R		ADA EVENT	COMPUTE REAL EVENT - 1ST EVENT
0373	00475	002020		SSA	RESULTS NEG (EVENT BELOW CLUST)?
0374	00476	026537R		JMP SEAER	YES, ERROR
0375	00477	072544R		STA EVOFF	SAVE EVENT OFFSET
0376	00500	003004		CMA, INA	
0377	00501	040001		ADA B	COMPUTE CLUSTER LENGTH - OFFSET
0378	00502	002020		SSA	RESULTS NEG (EVENT ABOVE CLUST)?
0379	00503	026532R		JMP EVOUT	YES
0380	00504	066541R		LDB CLUST	
0381	00505	046544R		ADB EVOFF	B = ADDR OF ACTION/NEXT STATE PR
0382	00506	160001		LDA B, I	
0383	00507	006400	SEAF	CLB	
0384	00510	101110		RRR 8	A = ACTION INDEX
0385	00511	005727		BLF, BLF	& B = NEXT STATE
0386	00512	177302R		STB STATE, I	
0387	00513	072542R		STA CURAC	SAVE ACTION
0388	00514	062543R		LDA EVENT	
0389	00515	001727		ALF, ALF	GET WORD READY FOR TRACE TABLE:
0390	00516	030001		IOR B	EVENT & RESULTANT STATE
0391	00517	017143R		JSB TRACE	
0392	00520	163275R		LDA PRVAC, I	
0393	00521	010074		AND 8377	ISOLATE PREVIOUS ACTION
0394	00522	001727		ALF, ALF	
0395	00523	032542R		IOR CURAC	MERGE IN CURRENT ACTION
0396	00524	173275R		STA PRVAC, I	& SAVE
0397	00525	062542R		LDA CURAC	
0398	00526	042311R		ADA ACTAD	A = ADDR OF APPROPRIATE ACTION;
0399	00527	164000		LDB A, I	
0400	00530	163061R		LDA MPFLS, I	
0401	00531	124001		JMP B, I	GO TO ACTION
0402	00532	046541R	EVOUT	ADB CLUST	
0403	00533	006004		INB	B = ADDR OF NEXT CLUSTER HEADER
0404	00534	056545R		CPB NEXST	ARE WE THROUGH WITH THIS STATE?
0405	00535	026537R		JMP SEAER	YES, ERROR SINCE EVENT NOT FOUND
0406	00536	026465R		JMP PCLUS	NO, PROCESS NEXT CLUSTER
0407	00537	062623R	SEAER	LDA BLOUT	SET ACTION/NEXT STATE TO HANDLE
0408	00540	026507R		JMP SEAF	IMPROBABLE SITUATION
0409*					
0410	00541	000000	CLUST	OCT 0	ADDR OF 1ST CLUSTER ENTRY
0411	00542	000000	CURAC	OCT 0	CURRENT ACTION
0412	00543	000000	EVENT	OCT 0	CURRENT EVENT #
0413	00544	000000	EVOFF	OCT 0	OFFSET OF EVENT FROM CLUSTER
0414	00545	000000	NEXST	OCT 0	ADDR OF ENTRY FOR NEXT STATE

0416* SUBROUTINE ENSEN: CHECK SEND & SET SEND-CONTINUE FLAG

0417*
 0418 00546 000000 ENSEN NOP
 0419 00547 002002 SZA SEND OK?
 0420 00550 026155R JMP LOW NO, SET EVENT #LINE ERROR (LOW)
 0421 00551 163061R LDA MPFLS,I
 0422 00552 030055 IOR ,2 SET SEND-CONTINUE FLAG (BIT 1)
 0423 00553 173061R STA MPFLS,I
 0424 00554 126546R JMP ENSEN,I

0426* SUBROUTINE SCM: SEND CONTROL MESSAGE (ID, IF ANY, HAS
 0427* BEEN SENT ALREADY)

0428* (A) = INDEX OF MESSAGE TO BE SENT;
 0429* 0 = ENQ 5 = WACK
 0430* 1 = NAK 6 = RVI
 0431* 2 = EOT 7 = DLE EOT
 0432* 3 = ACK0 8 = TTD (STX ENQ)
 0433* 4 = ACK1 9 = SOH ENQ
 0434*

0435 00555 000000 SCM NOP
 0436 00556 072606R STA SCMTP
 0437 00557 066555R LDB SCM
 0438 00560 177270R STB CMRET,I SAVE SCM RETURN
 0439 00561 167066R LDB ENVIR,I
 0440 00562 005200 RBL
 0441 00563 006020 SSB TRANSM CODE = ASCII?
 0442 00564 026567R JMP ++3 YES
 0443 00565 043411R ADA EBCMA NO
 0444 00566 002001 RSS
 0445 00567 043341R ADA ASCMA
 0446 00570 160000 LDA A,I A = ADDR OF MESSAGE
 0447 00571 066606R LDB SCMTP
 0448 00572 044050 ADB M3 COMPUTE INDEX = 3
 0449 00573 006020 SSB INDEX 3 OR MORE?
 0450 00574 026577R JMP ++3 NO
 0451 00575 064047 LDB M4 YES: IN EITHER CASE,
 0452 00576 002001 RSS
 0453 00577 064050 LDB M3 B = (1 + MESSAGE LENGTH)
 0454 00600 017776R JSB BSCT SEND CONTROL MESSAGE
 0455 00601 000000 OCT 0 SPECIFY NO ENDING OR INC
 0456 00602 002002 SZA SEND OK?
 0457 00603 026155R JMP LOW NO, SET EVENT #LINE ERROR (LOW)
 0458 00604 163270R LDA CMRET,I GET RETURN FROM SCM
 0459 00605 027113R JMP STXT4 INC # OF MESSAGES SENT
 0460 00606 000000 SCMTP OCT 0 TEMP FOR SCM

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0462*      SUBROUTINE SETUP:  SET UP RETURN ADDRESSES TO PHYSICAL
0463*                        DRIVER & EQTX POINTERS
0464*      (A) = A-REG PASSED BY PHYSICAL
0465*      (B) = P+1 RETURN OF CURRENT SLC ROUTINE
0466*      (P) = JSB SETUP
0467*
0468 00607 000000  SETUP NOP
0469 00610 073262R  STA PHA      SAVE A-REG PADDED BY PHYSICAL
0470 00611 077050R  STB PRETF   SAVE P+1 (COMPLETION) ADDR
0471 00612 006004  INB
0472 00613 077047R  STB PRET    SAVE P+2 (CONTINUATION) ADDR
0473 00614 064300  LDB EQTAD   B = EQT 1 ADDR
0474 00615 044056  ADB ,3      B = EQT 4 ADDR
0475 00616 057265R  CPB ET04    ALREADY CONFIGURED FOR THIS EQT?
0476 00617 126607R  JMP SETUP,I  YES
0477 00620 077265R  STB ET04
0478 00621 044061  ADB ,6      B = EQT 10 ADDR
0479 00622 077051R  STB ET10
0480 00623 006004  INB      B = EQT 11 ADDR
0481 00624 077266R  STB ET11
0482 00625 044056  ADB ,3      B = EQT 14 ADDR
0483 00626 077267R  STB ET14
0484 00627 044056  ADB ,3      B = EQT 17 ADDR
0485 00630 164001  LDB B,I     B = EQTX 1 ADDR
0486 00631 160001  LDA B,I     COMPUTE TOTAL EQTX LENGTH
0487 00632 042760R  ADA EFIXC   -(1 + FIXED LENGTH)
0488 00633 047241R  ADB ,21    EQTX 22
0489 00634 077765R  STB BCC     BLOCK=CHECK CHAR
0490 00635 006004  INB      EQTX 23
0491 00636 077766R  STB BLKSP   BLOCK SPEC BITS
0492 00637 006004  INB      EQTX 24
0493 00640 077767R  STB EBUFA   EDITOR BUFFER ADDR
0494 00641 006004  INB      EQTX 25
0495 00642 077770R  STB EBUFL   EDITOR BUFFER LENGTH
0496 00643 006004  INB      EQTX 26
0497 00644 077771R  STB ENXT    NEXT EDITOR STATE INDEX
0498 00645 006004  INB      EQTX 27
0499 00646 077056R  STB FRET    EDITOR RETURN ADDR
0500 00647 006004  INB      EQTX 28
0501 00650 077772R  STB ESTAT   EDITOR STATUS
0502 00651 006004  INB      EQTX 29
0503 00652 077773R  STB HDCNT   HEADER COUNT
0504 00653 006004  INB      EQTX 30
0505 00654 077774R  STB ICCTR   INIT CHAR CTR
0506 00655 006004  INB      EQTX 31
0507 00656 077775R  STB SYCNT   LEADING SYNC CTR
0508 00657 006004  INB      EQTX 32
0509 00660 077052R  STB CMASK   7 OR 8-BIT CHAR MASK
0510 00661 006004  INB      EQTX 33
0511 00662 077057R  STB KEY     ENTRY AFTER PHYS RECALL
0512 00663 006004  INB      EQTX 34
0513 00664 077060R  STB MAXCC   MAX CONTROL CHAR
0514 00665 006004  INB      EQTX 35
0515 00666 077061R  STB MPFLS   MESSAGE PROCESSOR FLAGS
0516 00667 006004  INB      EQTX 36
0517 00670 077062R  STB NTRY    NUMBER OF RETRIES

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0510	00671	006004	INB	EQTX 37	
0519	00672	077063R	STB RTCTR		RETRY CTR
0520	00673	006004	INB	EQTX 38	
0521	00674	077064R	STB TCTA		TRANS CODE TABLE ADDR
0522	00675	006004	INB	EQTX 39	
0523	00676	077271R	STB CONVL		CONVERSTNL BUFFER LENGT
0524	00677	006004	INB	EQTX 40	
0525	00700	077272R	STB CURRQ		CURRENT READ REQ #
0526	00701	006004	INB	EQTX 41	
0527	00702	077273R	STB IDFLS		ID SEQ FLAGS/LENGTHS
0528	00703	006004	INB	EQTX 42	
0529	00704	077274R	STB NLTO		# OF 3-SECS IN LONG T/O
0530	00705	006004	INB	EQTX 43	
0531	00706	077275R	STB PRVAC		PREV & CURRENT ACTIONS
0532	00707	006004	INB	EQTX 44	
0533	00710	077276R	STB PRVST		PREV-1 & PREV STATES
0534	00711	006004	INB	EQTX 45	
0535	00712	077277R	STB PVACK		CODE FOR PREV ACK
0536	00713	006004	INB	EQTX 46	
0537	00714	077300R	STB RIDAD		ADDR OF RECVD ID SEQ LST
0538	00715	006004	INB	EQTX 47	
0539	00716	077301R	STB SIDAD		ADDR OF SENT ID SEQ
0540	00717	006004	INB	EQTX 48	
0541	00720	077302R	STB STATE		MAIN SLC STATE NUMBER
0001	00721	006004	INB	EQTX 49	
0002	00722	077303R	STB TOCTR		LONG-TIMEOUT CTR
0003	00723	006004	INB	EQTX 50	
0004	00724	077304R	STB CMBUF		CONTROL MESSAGE BUFFER
0005	00725	044063	ADB .8	EQTX 50	
0006	00726	077270R	STB CMRET		SCM RETURN ADDR
0007	00727	006004	INB	EQTX 59	
0008	00730	077312R	STB TXRET		STXT RETURN ADDR
0009	00731	006004	INB	EQTX 60	
0010	00732	077065R	STB TLOG		TRANSMISSION LOG (POSTV)
0011	00733	006004	INB	EQTX 61	
0012	00734	077066R	STB ENVIR		SPECIFIED ENVIRONMENT
0013	00735	006004	INB	EQTX 62	
0014	00736	077053R	STB CTLEN		CHAR TRACE LENGTH
0015	00737	006004	INB	EQTX 63	
0016	00740	077305R	STB LTCS		LONG-TERM COMM STATISTICS
0017	00741	047034R	ADB .11	EQTX 74	
0018	00742	077055R	STB CTNXT		NEXT WORD IN CHAR TRACE
0019	00743	006004	INB	EQTX 75	
0020	00744	077306R	STB TRNEW		ADDR OF NEWST TRACE NTRY
0021	00745	006004	INB	EQTX 76	
0022	00746	077307R	STB TROLD		ADDR OF OLDST TRACE NTRY
0023	00747	006004	INB	EQTX 77	
0024	00750	077310R	STB TRFWA		TRACE TABLE 1ST WORD
0025	00751	044000	ADB A	EQTX LWA	
0026	00752	077054R	STB CTLWA		CHAR TRACE LAST WORD
0027	00753	163053R	LDA CTLEN, I		
0028	00754	003004	CMA, INA		
0029	00755	044000	ADB A		
0030	00756	077311R	STB TRLWA		EVENT TRACE LAST WORD
0031	00757	126007R	JMP SETUP, I		
0032*					

0033	00114	EFLN EQU 76	LENGTH OF EQTX = TRACE TABLE
0034	00760 177663	EFIXC ABS -1-EFLN	+1(+ FIXED-LENGTH PART OF EQTX)
0035	00761 000114	EFIXL DEF EFLN	FIXED LENGTH OF EQT EXTENSION

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0037*      SUBROUTINE SIDIF: SEND ID SEQUENCE IF NECESSARY
0038*      (P)      = JSB SIDIF
0039*      (P+1)    = RETURN IF SENDING ID
0040*      (P+4)    = RETURN IF NOT SENDING ID
0041*
0042 00762 000000 SIDIF NOP
0043 00763 163061R LDA MPFLS,I GET CONTACT-MADE FLAG (BIT 0)
0044 00764 066762R LDB SIDIF
0045 00765 044056 ADB ,3 GET P+4 RETURN
0046 00766 000010 SLA CONTACT MADE (BIT 0 = 1)?
0047 00767 124001 JMP B,I YES, TAKE P+4 RETURN
0048 00770 163273R LDA IDFLS,I GET SEND/RCV ID FLAGS
0049 00771 001727 ALF,ALF
0050 00772 010074 AND B377 ISOLATE SEND FLAG
0051 00773 002003 SZA,RSS ID TO BE SENT?
0052 00774 124001 JMP B,I NO, RETURN
0053 00775 163301R LDA SIDAD,I
0054 00776 164000 LDB A,I
0055 00777 007000 CMB B = - (LENGTH +1)
0056 01000 002004 INA A = ADDR OF ID SEQ
0057 01001 126762R JMP SIDIF,I

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0059* SUBROUTINE STXT: SEND TEXT

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0060*
0061 01002 000000 STXT NOP
0062 01003 163061R LDA MPFLS,I
0063 01004 013120R AND HFFBF CLEAR MP TIMEOUT FLAG (BIT 6)
0064 01005 173061R STA MPFLS,I
0065 01006 063002R LDA STXT
0066 01007 173312R STA TXRET,I SAVE STXT RETURN
0067 01010 002400 CLA
0068 01011 173065R STA TLOG,I ZERO TRANSMISSION LOG
0069 01012 163766R LDA BLKSP,I
0070 01013 002021 SSA,RSS HEADING TO BE SENT?
0071 01014 027047R JMP TXBEG NO
0072 01015 060065 LDA ,10
0073 01016 017121R JSB STXCH SEND SOH CHAR
0074 01017 017776R JSB BSCT SEND CHARS
0075 01020 000000 OCT 0 SPECIFY NO ENDING OR INC
0076 01021 016546R JSB ENSEN CHECK SEND & SET SEND-CONT FLAG
0077 01022 163051R LDA ET10,I
0078 01023 164000 LDB A,I
0079 01024 044052 ADB M1 B = (1 + HEADING LENGTH)
0080 01025 002004 INA A = ADDR OF HEADING
0081 01026 017776R JSB BSCT SEND HEADING
0082 01027 100000 OCT 100000 SPECIFY INC & NO ENDING
0083 01030 016546R JSB ENSEN CHECK SEND
0084 01031 137065R ISZ TLOG,I
0085 01032 137065R ISZ TLOG,I INC TRANS LOG FOR BYTE COUNT
0086 01033 163051R LDA ET10,I GET ORIG BUFFER ADDR
0087 01034 164000 LDB A,I GET HEADING LENGTH IN BYTES
0088 01035 044051 ADB M2 ADD 2 FOR BYTE COUNT
0089 01036 007004 CMB,INB & MAKE POS
0090 01037 001200 RAL CHANGE TO BYTE ADDR
0091 01040 040001 ADA B
0092 01041 001300 RAR
0093 01042 173051R STA ET10,I A = ADDR OF TEXT AFTER HEADING
0094 01043 147266R ADB ET11,I SAVE TEXT ADDR
0095 01044 006021 SSB,RSS ADD ORIG BYTE COUNT
0096 01045 027066R JMP STXT3 DOES TEXT FOLLOW HEADING?
0097 01046 177266R STB ET11,I NO, SEND ENDING CHARS
0098 01047 167766R TXBEG LDB BLKSP,I YES, SAVE TEXT BYTE LENGTH
0099 01050 063034R LDA ,11
0100 01051 004010 SLB START WITH INDEX FOR STX
0101 01052 063037R LDA ,14 IS TEXT TRANSPARENT (BIT 0 = 1)?
0102 01053 017121R JSB STXCH YES, SET INDEX FOR DLE STX
0103 01054 017776R JSB BSCT SEND START-OF-TEXT CHARS
0104 01055 000000 OCT 0 SEND CHARS
0105 01056 016546R JSB ENSEN SPECIFY NO ENDING OR INC
0106 01057 163051R LDA ET10,I CHECK SEND & SET SEND-CONT FLAG
0107 01060 167266R LDB ET11,I A = BUFFER ADDR
0108 01061 044052 ADB M1 B = (1 + BUFFER LENGTH)
0109 01062 017776R JSB BSCT SEND BODY OF TEXT
0110 01063 100000 OCT 100000 SPECIFY INC & NO ENDING
0111 01064 002002 SZA SEND OK?
0112 01065 026155R JMP LOW NO, SET EVENT = LINE ERROR (LOW)
0113 01066 063035R STXT3 LDA ,12 START WITH INDEX FOR ETX
0114 01067 167766R LDB BLKSP,I

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0115	01070	005310	RBR,SLB	DOES BLOCK END WITH ETX (B1 =1)?
0116	01071	002004	INA	NO, SET INDEX FOR ETB
0117	01072	006020	SSB	IS TEXT TRANSPARENT (BIT 0 =1)?
0118	01073	040056	ADA ,3	YES, CHANGE INDEX FOR TRANSP
0119	01074	027101R	JMP STXT5	
0120	01075	167772R	LDB ESTAT,I	
0121	01076	005727	BLF,BLF	
0122	01077	006020	SSB	TRANS TEXT DETECTED (BIT 7 =1)?
0123	01100	040056	ADA ,3	YES, CHANGE INDEX FOR TRANSP
0124	01101	017121R	STXT5 JSB STXCH	SEND TEXT-ENDING CHARS
0125	01102	017776R	JSB BSCT	SEND CHARS
0126	01103	000002	OCT 2	SPECIFY ENDING & NO INC
0127	01104	016546R	JSB ENSEN	CHECK SEND & SET SEND-CONT FLAG
0128	01105	163274R	LDA NLTO,I	
0129	01106	173303R	STA TOCTR,I	RESET LONG-TIME-OUT CTR
0130	01107	163061R	LDA MPFLS,I	
0131	01110	010050	AND M3	CLEAR SEND-CONTINUE FLAG
0132	01111	173061R	STA MPFLS,I	
0133	01112	163312R	LDA TXRET,I	GET RETURN FROM STXT
0134	01113	064055	STXT4 LDB ,2	INC # OF MESSAGES SENT;
0135	01114	047306R	ADB LTCS	WORD 3 OF LONG-TERM STAT
0136	01115	134001	ISZ B,I	
0137	01116	000000	NOP	NULL IN CASE OF ROLLOVER
0138	01117	124000	JMP A,I	RETURN
0139	01120	177677	HFFBF OCT 177677	REVERSE MASK BIT 6

0141* SUBROUTINE STXCH: SEND TEXT CHARACTERS

0142* (A) = INDEX OF MESSAGE TO BE SENT

0143*	10 = SOH	11 = STX	) ONE CHAR
0144*	12 = ETX	13 = ETB	)
0145*	14 = DLE STX	15 = DLE ETX	) TWO CHAR
0146*	16 = DLE ETB		)

0147	01121	000000	STXCH NOP	
0148	01122	072606R	STA SCMTP	
0149	01123	167066R	LDB ENVIR,I	
0150	01124	005200	RBL	
0151	01125	006020	SSB	TRANSM CODE = ASCII?
0152	01126	027131R	JMP ++3	YES
0153	01127	043411R	ADA EBCMA	NO
0154	01130	002001	RSS	
0155	01131	043341R	ADA ASCMA	
0156	01132	160000	LDA A,I	A = ADDR OF CHARS
0157	01133	066606R	LDB SCMTP	
0158	01134	047256R	ADB M14	COMPUTE INDEX = 14
0159	01135	006020	SSB	INDEX 14 OR MORE?
0160	01136	027141R	JMP ++3	NO
0161	01137	064050	LDB M3	YES: IN EITHER CASE,
0162	01140	002001	RSS	
0163	01141	064051	LDB M2	B = (1 + # OF CHARS)
0164	01142	127121R	JMP STXCH,I	RETURN

0166* SUBROUTINE TRACE: PUT WORD INTO TRACE TABLE

0167* (A) = WORD TO BE STORED

0168*

0169	01143	000000	TRACE NOP	
0170	01144	167306R	LDB TRNEW,I	A = ADDR OF CURRENT ENTRY, WORD 1
0171	01145	164001	LDB B,I	B = ADDR OF NEXT WORD TO BE FILLED
0172	01146	157307R	CPB TROLD,I	MATCH ADDR OF OLDEST ENTRY?
0173	01147	002001	RSS	YES
0174	01150	027155R	JMP ++5	NO
0175	01151	164001	LDB B,I	B = ADDR OF NEXT-TO-OLDEST ENTRY
0176	01152	177307R	STB TROLD,I	UPDATE PTR TO OLDEST ENTRY
0177	01153	167306R	LDB TRNEW,I	
0178	01154	164001	LDB B,I	B = ADDR OF NEXT WORD TO BE FILLED
0179	01155	170001	STA B,I	STORE WORD IN TRACE TABLE
0180	01156	017215R	JSB TRINC	GET ADDR OF NEXT WORD TO FILL
0181	01157	163306R	LDA TRNEW,I	
0182	01160	054000	CPB A	IS NEXT WORD = CURRENT ENTRY?
0183	01161	002001	RSS	YES, SET NEXT WORD = ENTRY START
0184	01162	027165R	JMP ++3	
0185	01163	017215R	JSB TRINC	ADVANCE TO 2ND WORD OF ENTRY
0186	01164	017215R	JSB TRINC	ADVANCE TO 3RD WORD OF ENTRY
0187	01165	174000	STB A,I	UPDATE WORD 1 OF CURRENT ENTRY
0188	01166	127143R	JMP TRACE,I	

0190* SUBROUTINE TRAIN: GET FUNCTION & INITIALIZE TRACE ENTRY

0191* (B) = REQUEST CODE (OFFSET 6 BITS TO LEFT)

0192* (P) = JSB TRAIN

0193* (A) = FUNCTION CODE

0194* (B) = BLOCK SPEC BITS

0195*

0196	01167	000000	TRAIN NOP	
0197	01170	160213	LDA EQT09,I	GET CONTROL WORD
0198	01171	001727	ALF,ALF	& POSITION FUNCTION
0199	01172	001222	RAL,RAL	
0200	01173	057247R	CPB B300	IS THIS A CONTROL REQUEST?
0201	01174	002001	RSS	YES
0202	01175	010062	AND ,7	ISOLATE READ/WRITE FUNCTION
0203	01176	010072	AND B77	ISOLATE CONTROL FUNCTION
0204	01177	073214R	STA TRTMP	& SAVE IT
0205	01200	030001	IOR B	MERGE IN REQUEST CODE (OFFSET)
0206	01201	017143R	JSB TRACE	STORE REQ & FUNCT IN TRACE TABLE
0207	01202	002400	CLA	
0208	01203	173065R	STA TLOG,I	
0209	01204	173766R	STA BLKSP,I	
0210	01205	160213	LDA EQT09,I	GET CONTROL WORD
0211	01206	001700	ALF	POSITION BLOCK SPEC BITS
0212	01207	012447R	AND HE000	& ISOLATE THEM
0213	01210	001222	RAL,RAL	NOW IN BITS 1,0, & 15
0214	01211	070001	STA B	
0215	01212	063214R	LDA TRTMP	GET FUNCTION
0216	01213	127167R	JMP TRAIN,I	
0217	01214	000000	TRTMP OCT 0	TRACE TABLE TEMPORARY

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0219*   SUBROUTINE TRINC: INCREMENTS ADDRESS IN EVENT TRACE,
0220*   CHECKING FOR WRAPAROUND
0221*   (B) = ADDR TO BE INC
0222*
0223 01215 000000 TRINC NOP
0224 01216 057311R CPB TRLWA IS IT LAST WORD OF TABLE?
0225 01217 027222R JMP *+3 YES
0226 01220 006004 INB
0227 01221 127215R JMP TRINC,I
0228 01222 067310R LDB TRF=A WRAPAROUND TO 1ST OF TABLE
0229 01223 127215R JMP TRINC,I

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0231*   SUBROUTINE ZSTAT: ZERO LONG TERM COMM. STATISTICS
0232*
0233 01224 000000 ZSTAT NOP
0234 01225 063255R LDA M11
0235 01226 073236R STA MPCTR SET COUNTER = 11
0236 01227 063305R LDA LTCS A=ADDR OF WORD 1, LONG-TERM STAT
0237 01230 006400 CLB
0238 01231 174000 ZLOOP STB A,I ZERO TABLE ENTRY
0239 01232 002004 INA
0240 01233 037236R ISZ MPCTR
0241 01234 027231R JMP ZLOOP
0242 01235 127224R JMP ZSTAT,I
0243*
0244 01236 000000 MPCTR OCT 0 COUNTER

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0246* CONSTANTS & STORAGE FOR MESSAGE PROCESSOR ONLY

0247*

0248	01237	000020	.16	DEC 16	DEC 16, OCT 20
0249	01240	000024	.20	DEC 20	DEC 20, OCT 24
0250	01241	000025	.21	DEC 21	DEC 21, OCT 25
0251	01242	000033	.27	DEC 27	DEC 27, OCT 33
0252	01243	000035	.29	DEC 29	DEC 29, OCT 35
0253	01244	000036	.30	DEC 30	DEC 30, OCT 34
0254	00071		.31	EQU 71B	DEC 31, OCT 37
0255	01245	000040	.32	DEC 32	DEC 32, OCT 40, BIT 5
0256	01246	000200	B200	OCT 200	OCT 200, DEC 120
0257	01247	000300	B300	OCT 300	OCT 300, DEC 192
0258	01250	002000	B2000	OCT 002000	OCT 2000, BIT 10, LEFT 4
0259	01251	012000	H1400	OCT 012000	LEFT HALF = DEC 20
0260	01252	137777	HBFFF	OCT 137777	REVERSE BIT 14
0261	01253	167777	HEFFF	OCT 167777	REVERSE BIT 12
0262	01254	177400	HFF00	OCT 177400	
0263	01255	177765	M11	DEC -11	DEC -11, OCT 177765
0264	01256	177762	M14	DEC -14	DEC -14, OCT 177762
0265	01257	177757	M17	DEC -17	DEC -17, OCT 177757, REV BIT 4
0266	01260	177754	M20	DEC -20	DEC -20, OCT 177754, OCT -24
0267	01261	177740	M32	DEC -32	DEC -32, OCT 177740, OCT -40

0268*

0269	01262	000000	PHA	OCT 0	A-REG ON ENTRY FROM PHYSICAL
0270	01263	000000	PHB	OCT 0	B-REG ON ENTRY FROM PHYSICAL
0271	01264	000000	PRETV	OCT 0	VARIABLE RETURN TO PHYSICAL

0272*

0273* EQT POINTERS

0274	01265	000000	ET04	OCT 0	PTR TO COMPLETION STATUS IN EQT
0275	01266	000000	ET11	OCT 0	PTR TO EQT 11: REQ BUFFER LENGTH
0276	01267	000000	ET14	OCT 0	PTR TO TRANS LOG IN EQT 14

0277*

0278* EQT EXTENSION POINTERS

0279*

0280	01270	000000	CMRET	OCT 0	PTR TO SCM RETURN
0281	01271	000000	CONVL	OCT 0	PTR TO WRITE-CONV BUFFER LENGTH
0282	01272	000000	CURRQ	OCT 0	PTR TO CURRENT READ REQ #
0283	01273	000000	IDFLS	OCT 0	PTR TO ID FLAGS; EACH HALF # OF ID SEGS; LEFT, SEND; RT, RECV
0284*					
0285	01274	000000	NLTO	OCT 0	PTR TO # OF 3-SECS IN LONG TMOUT
0286	01275	000000	PRVAC	OCT 0	PTR TO PREV ACTION; PREV, CURRENT
0287	01276	000000	PRVST	OCT 0	PTR TO PREV STATES; PREV=1, PREV
0288	01277	000000	PVACK	OCT 0	PTR TO CODE FOR PREV ACK
0289	01300	000000	RIDAD	OCT 0	ADDR OF RECVD ID SEQ LIST
0290	01301	000000	SIDAD	OCT 0	ADDR OF SENT ID SEQ
0291	01302	000000	STATE	OCT 0	PTR TO MAIN SLC STATE NUMBER
0292	01303	000000	TOCTR	OCT 0	PTR TO LONG-TIMEOUT CTR
0293	01304	000000	CMBUF	OCT 0	ADDR OF CONTROL MESSAGE RECV BUF
0294	01305	000000	LTC3	OCT 0	ADDR OF LONG-TERM COMM STATISTICS
0295	01306	000000	TRNEW	OCT 0	ADDR OF NEWEST TRACE TABLE ENTRY
0296	01307	000000	TROLD	OCT 0	ADDR OF OLDEST TRACE TABLE ENTRY
0297	01310	000000	TRFWA	OCT 0	FIRST WORD ADDR OF TRACE TABLE
0298	01311	000000	TRLWA	OCT 0	LAST WORD ADDR OF TRACE TABLE
0299	01312	000000	TXRET	OCT 0	PTR TO STXT RETURN

0301* ASCII CONTROL MESSAGES -- WITH ODD PARITY

0302*					
0303	01313	102577	ASCM	OCT 102577	ENQ PAD 0
0304	01314	012577		OCT 12577	NAK PAD 1
0305	01315	002177		OCT 02177	EOT PAD 2
0306	01316	010260		OCT 10260	DLE ACK0 3
0307	01317	077577		OCT 77577	PAD PAD
0308	01320	010061		OCT 10061	DLE ACK1
0309	01321	077577		OCT 77577	PAD PAD
0310	01322	010073		OCT 10073	DLE WACK
0311	01323	077577		OCT 77577	PAD PAD
0312	01324	010274		OCT 10274	DLE RVI 6
0313	01325	077577		OCT 77577	PAD PAD
0314	01326	010004		OCT 10004	DLE EOT
0315	01327	077577		OCT 77577	PAD PAD
0316	01330	001205		OCT 01205	STX ENQ 8 (TTD)
0317	01331	000605		OCT 00605	SOH ENQ 9
0318	01332	000400		OCT 00400	SOH 10
0319	01333	001000		OCT 01000	STX 11
0320	01334	101400		OCT 101400	ETX 12
0321	01335	113400		OCT 113400	ETB 13
0322	01336	010002		OCT 10002	DLE STX 14
0323	01337	010203		OCT 010203	DLE ETX 15
0324	01340	010227		OCT 010227	DLE ETB 16

0325*					
0326	01341	001342R	ASCMA	DEF ++1	ASCII CONTROL MESSAGE ADDR PTR
0327	01342	001313R		DEF ASCM	ENQ 0
0328	01343	001314R		DEF ASCM+1	NAK
0329	01344	001315R		DEF ASCM+2	EOT
0330	01345	001316R		DEF ASCM+3	ACK0
0331	01346	001320R		DEF ASCM+5	ACK1
0332	01347	001322R		DEF ASCM+7	WACK
0333	01350	001324R		DEF ASCM+9	RVI
0334	01351	001326R		DEF ASCM+11	DLE EOT
0335	01352	001330R		DEF ASCM+13	TTD
0336	01353	001331R		DEF ASCM+14	SOH ENQ
0337	01354	001332R		DEF ASCM+15	SOH 10 TEXT
0338	01355	001333R		DEF ASCM+16	STX 11
0339	01356	001334R		DEF ASCM+17	ETX 12
0340	01357	001335R		DEF ASCM+18	ETB 13
0341	01360	001336R		DEF ASCM+19	DLE STX 14
0342	01361	001337R		DEF ASCM+20	DLE ETX 15
0343	01362	001340R		DEF ASCM+21	DLE ETB 16

0345* EBCDIC CONTROL MESSAGES

0346*					
0347	01363	026777	EBCM	OCT 26777	ENQ PAD
0348	01364	036777		OCT 36777	NAK PAD
0349	01365	033777		OCT 33777	EOT PAD
0350	01366	010160		OCT 10160	DLE ACK0
0351	01367	177777		DEC -1	PAD PAD
0352	01370	010141		OCT 10141	DLE ACK1
0353	01371	177777		DEC -1	PAD PAD
0354	01372	010153		OCT 10153	DLE WACK
0355	01373	177777		DEC -1	PAD PAD

0356	01374	010174	OCT	10174	DLE RVI		
0357	01375	177777	DEC	+1		PAD PAD	
0358	01376	010067	OCT	10067	DLE EOT		
0359	01377	177777	DEC	+1		PAD PAD	
0360	01400	001055	OCT	01055	STX ENQ		
0361	01401	000455	OCT	00455	SOH ENQ		
0362	01402	000400	OCT	00400	SOH		10
0363	01403	001000	OCT	01000	STX		11
0364	01404	001400	OCT	01400	ETX		12
0365	01405	023000	OCT	23000	ETB		13
0366	01406	010002	OCT	10002	DLE STX		14
0367	01407	010003	OCT	10003	DLE ETX		15
0368	01410	010046	OCT	10046	DLE ETB		16
0369*							
0370	01411	001412R	EBCMA	DEF	++1	EBCDIC CONTROL MESSAGE ADDR PTR	
0371	01412	001363R		DEF	EBCM	ENQ	
0372	01413	001364R		DEF	EBCM+1	NAK	
0373	01414	001365R		DEF	EBCM+2	EOT	
0374	01415	001366R		DEF	EBCM+3	ACK0	
0375	01416	001370R		DEF	EBCM+5	ACK1	
0376	01417	001372R		DEF	EBCM+7	WACK	
0377	01420	001374R		DEF	EBCM+9	RVI	
0378	01421	001376R		DEF	EBCM+11	DLE EOT	
0379	01422	001400R		DEF	EBCM+13	TTD	
0380	01423	001401R		DEF	EBCM+14	SOH ENQ	
0381	01424	001402R		DEF	EBCM+15	SOH	10 TEXT
0382	01425	001403R		DEF	EBCM+16	STX	11
0383	01426	001404R		DEF	EBCM+17	ETX	12
0384	01427	001405R		DEF	EBCM+18	ETB	13
0385	01430	001406R		DEF	EBCM+19	DLE STX	14
0386	01431	001407R		DEF	EBCM+20	DLE ETX	15
0387	01432	001410R		DEF	EBCM+21	DLE ETB	16

0389*

ACTION DEFINITIONS

0390*

0391	00400	AC01	EQU 4000	OPEN LINE
0392	01000	AC02	EQU 10000	CLOSE LINE
0393	01400	AC03	EQU 14000	SEND EOT
0394	02000	AC04	EQU 20000	SEND EOT, RECV RESPONSE
0395	02400	AC05	EQU 24000	SEND ENQ, RECV RESPONSE
0396	03000	AC06	EQU 30000	SEND ENQ, RECV CONVERSATIONAL TEXT
0397	03400	AC07	EQU 34000	INC RETRY CTR & RESPONSE ERRORS
0398	04000	AC08	EQU 40000	SEE IF PRIMARY OR SECONDARY
0399	04400	AC09	EQU 44000	SET CONTACT FLG & POST NORM COMP
0400	05000	AC10	EQU 50000	POST 0, NORMAL COMPLETION
0401	05400	AC11	EQU 54000	POST 1, INVALID REQUEST
0402	06000	AC12	EQU 60000	POST 2, REQ INCOMPATIBLE W STATE
0403	06400	AC13	EQU 64000	POST 3, BAD ID SEQUENCE
0404	07000	AC14	EQU 70000	POST 4, LINE ERROR
0405	07400	AC15	EQU 74000	POST 5, EOT RECVD
0406	10000	AC16	EQU 100000	POST 6, DLE EOT RECVD
0407	10400	AC17	EQU 104000	POST 7, LONG TIMEOUT OCCURRED
0408	11000	AC18	EQU 110000	POST 8, ENQ RECVD AFTER EOT SENT
0409	11400	AC19	EQU 114000	POST 9, TEXT OVERRUN
0410	12000	AC20	EQU 120000	POST 10, MAX # OF NAKS RECVD
0411	12400	AC21	EQU 124000	POST 11, MAX # OF ENQS SENT
0412	13000	AC22	EQU 130000	POST 12, RVI RECVD
0413	13400	AC23	EQU 134000	POST 13, ENQ RECVD AFTER ENQ SEN
0414	14000	AC24	EQU 140000	POST 14, NAK RECVD AFTER ENQ SEN
0415	14400	AC25	EQU 144000	POST 15, MAX ENQS RECVD FRM CONV
0416	15000	AC26	EQU 150000	POST 16, BAD RESPONSE TO TTD
0417	15400	AC27	EQU 154000	SEND TTD, RECV RESPONSE
0418	16000	AC28	EQU 160000	SEND TEXT, RECV RESPONSE
0419	16400	AC29	EQU 164000	SEND TEXT, TEXT
0420	17000	AC30	EQU 170000	CHECK RVI
0421	17400	AC31	EQU 174000	PROCESS POSITIVE ACK
0422	20000	AC32	EQU 200000	PROCESS SHORT TIMEOUT DURING SEND
0423	20400	AC33	EQU 204000	INC RETRY CTR
0424	21000	AC34	EQU 210000	CHECK TIMEOUT & BAD RESPONSE FLAGS
0425	21400	AC35	EQU 214000	PROCESS ENQ RECVD IN WRITE STATE
0426	22000	AC36	EQU 220000	PROCESS SHORT TIMEOUT DURING RECV
0427	22400	AC37	EQU 224000	CHECK READ REQUEST TYPE
0428	23000	AC38	EQU 230000	SEND ACK, RECV TEXT
0429	23400	AC39	EQU 234000	SEND PREV ACK, RECV TEXT
0430	24000	AC40	EQU 240000	SEND NAK, RECV TEXT
0431	24400	AC41	EQU 244000	RECV RESPONSE
0432	25000	AC42	EQU 250000	RECV TEXT
0433	25400	AC43	EQU 254000	SEND WACK, RECV RESPONSE
0434	26000	AC44	EQU 260000	SEND RVI, RECV TEXT
0435	26400	AC45	EQU 264000	POST 17, IMPOSSIBLE SITUATION
0436	27000	AC46	EQU 270000	SEND DLE-EOT
0437	27400	AC47	EQU 274000	INC MESSAGE ERRORS, RECV RESPONSE
0438	30000	AC48	EQU 300000	TOGGLE RECV ACK FLAG
0439	30400	AC49	EQU 304000	BCC ERROR: SEND NAK, RECV TEXT
0440	31000	AC50	EQU 310000	SET RECV ACK, CLEAR SEND ACK FLG
0441	31400	AC51	EQU 314000	TOGGLE SEND ACK FLAG
0442	32000	AC52	EQU 320000	TOGGLE SEND ACK & RECV ACK FLAGS

0443*

EVENT DEFINITIONS

0444*

0445*

0446	00000	EV00	EQU 0	EVENT 0: LINE OPEN REQUEST
0447	07000	EV14	EQU AC14	EVENT 14: ACK0 RECVD
0448	11000	EV18	EQU AC18	EVENT 18: ENQ RECEIVED
0449	16400	EV29	EQU AC29	EVENT 29: LONG TIMEOUT
0450	17000	EV30	EQU AC30	EVENT 30: LOW
0451	17400	EV31	EQU AC31	EVENT 31: HIGH

0453*

			LINE OPEN	
0454	01433	017224R ACT1	JSB ZSTAT	ZERO THE LONG TERM STATISTICS
0455	01434	060044	LDA M7	
0456	01435	173062R	STA NTRY,I	INIT # OF RETRIES = 7
0457	01436	063260R	LDA M20	
0458	01437	173274R	STA NLTO,I	INIT LONG TIMEOUT = 60 SEC
0459	01440	002400	CLA	
0460	01441	173273R	STA IDFLS,I	INIT BOTH ID FLAGS TO 0
0461	01442	173061R	STA MPFLS,I	INIT MESS PROC FLAGS
0462	01443	063311R	LDA TRLWA	
0463	01444	002004	INA	
0464	01445	173055R	STA CTNXT,I	INIT CHAR TRACE ADDR
0465	01446	026246R	JMP SLCPC	CONT,RETURN TO PHYS, STATUS = OK

0467*

			LINE CLOSE	
0468	01447	026246R ACT2	JMP SLCPC	CONT,RETURN TO PHYS, STATUS = OK

0470*

			SEND EOT	
0471	01450	060055 ACT3	LDA ,2	
0472	01451	016555R	JSB SCM	SEND EOT CONTROL MESSAGE
0473	01452	163061R	LDA MPFLS,I	
0474	01453	010054	AND ,1	EXCEPT FOR CONTACT-MADE FLAG,
0475	01454	173061R	STA MPFLS,I	INIT MESS PROC FLAGS
0476	01455	026157R	JMP HIGH	SET EVENT = HIGH (NORMAL COMPL)

0478*

			SEND EOT, RECV RESPONSE	
0479	01456	060055 ACT4	LDA ,2	
0480	01457	016555R	JSB SCM	SEND EOT CONTROL MESSAGE
0481	01460	163061R	LDA MPFLS,I	
0482	01461	010054	AND ,1	EXCEPT FOR CONTACT-MADE FLAG,
0483	01462	173061R	STA MPFLS,I	INIT MESS PROC FLAGS
0484	01463	163274R ACT4A	LDA NLTO,I	
0485	01464	173303R	STA TOCTR,I	RESET LONG-TIMEOUT CTR
0486	01465	027643R	JMP ACT5B	RECV RESPONSE (NO ID)

0488*

			SEND ENQ, RECV RESPONSE	
0489	01466	016762R ACT5	JSB SIDIF	SEND ID SEQUENCE IF NECESSARY
0490	01467	017776R	JSB BSCT	SEND ID
0491	01470	000000	OCT 0	SPECIFY NO ENDING OR INC
0492	01471	016546R	JSB ENSEN	CHECK SEND & SET SEND-CONT FLAG
0493	01472	167066R	LDB ENVIR,I	GET SPECIFIED ENVIRONMENT

0494	01473	002400	CLA	SPECIFY ENQ MESSAGE
0495	01474	005710	BLF,SLB	HASP WORKSTATION (BIT 12 =1)?
0496	01475	060064	LDA ,9	YES, SPECIFY SOH ENQ MESSAGE
0497	01476	016555R	JSB SCM	SEND CONTROL MESSAGE
0498	01477	163275R	LDA PRVAC,I	
0499	01500	013254R	AND HFF00	ISOLATE PREV ACTION
0500	01501	053042R	CPA H2000	PREV ACTION = 32?
0501	01502	027505R	JMP ++3	YES, BYPASS RESET
0502	01503	163274R	LDA NLTO,I	
0503	01504	173303R	STA TOCTR,I	RESET LONG-TIME-OUT CTR
0504	01505	163066R	LDA ENVIR,I	
0505	01506	002011	SLA,RSS	IS STATION PRIMARY?
0506	01507	027512R	JMP ACT5C	NO
0507	01510	063631R	LDA M27	
0508	01511	073046R	STA NOM3	SET NOM 3-SEC TIMEOUT TO 2,7 SEC
0509	01512	163061R	ACT5C LDA MPFLS,I	
0510	01513	010050	AND M3	CLEAR SEND-CONTINUE FLAG (BIT 1)
0511	01514	173061R	STA MPFLS,I	
0512	01515	163061R	ACT5A LDA MPFLS,I	GET CONTACT-MADE FLAG (BIT 0)
0513	01516	000010	SLA	CONTACT MADE (BIT 0 = 1)?
0514	01517	027643R	JMP ACT5B	YES
0515	01520	163273R	LDA IDFLS,I	GET SEND/RCV ID FLAGS
0516	01521	010074	AND B377	ISOLATE RCV FLAG
0517	01522	073641R	STA RIDNO	SAVE # OF ID SEQ IN THE LIST
0518	01523	002003	SZA,RSS	ID TO BE RECVD?
0519	01524	027643R	JMP ACT5B	NO
0520	01525	002300	CCE	YES, SET E =1 TO SAVE ID
0521	01526	063304R	LDA CMBUF	A = ADDR OF CONTRL MESS RCV BUF
0522	01527	067257R	LDB M17	B = -(1 + BUF LENGTH)
0523	01530	017067R	JSB BSCR	RECEIVE ID & CONTROL MESSAGE
0524*				
0525*			ROUTINE TO CHECK ID SEQUENCES	
0526	01531	073635R	STA IDTMP	SAVE EDITOR STATUS
0527	01532	064044	LDB M7	
0528	01533	044000	ADB A	
0529	01534	006021	SSB,RSS	WAS RESPONSE RECVD (STATUS < 7)?
0530	01535	027647R	JMP STEM	NO, PROCESS STATUS
0531	01536	163065R	LDA TLOG,I	GET
0001	01537	073634R	STA IDRLN	& SAVE RECVD ID LENGTH
0002	01540	002400	CLA	
0003	01541	173065R	STA TLOG,I	ZERO TRANSMISSION LOG
0004	01542	063641R	LDA RIDNO	GET # OF ID SEQ IN THE LIST
0005	01543	003004	CMA,INA	
0006	01544	073640R	STA RIDCT	& SET UP A COUNTER FOR THIS
0007	01545	163300R	LDA RIDAD,I	GET ADDR OF 1ST WORD IN ID LIST
0008	01546	073636R	STA IDWD1	& SAVE IT
0009	01547	002004	INA	
0010	01550	164000	IDLEN LDB A,I	BET # OF BYTES IN THE ENTRY
0011	01551	077633R	STB IDCNT	SAVE BYTE COUNT
0012	01552	002004	INA	
0013	01553	073632R	STA ,LRID	& ADDR OF LOCAL ID SEQ
0014	01554	057634R	CPB IDRLN	ENTRY LENGTH SAME AS RECVD ID?
0015	01555	027570R	JMP IDCOM	YES, GO COMPARE THE SEQUENCES
0016	01556	037640R	IDNXT ISZ RIDCT	HAVE WE LOOKED AT ALL ENTRIES?
0017	01557	002001	RSS	NO, PROCESS NEXT ENTRY
0018	01560	027625R	JMP IDBAD	YES, NO MATCH FOUND

0019	01561	063632R	LDA ,LRID	GET ADDR OF LOCAL ID SEQ
0020	01562	067633R	LDB IDCNT	& BYTE COUNT OF CURRENT ENTRY
0021	01563	004065	CLE,ERB	
0022	01564	002040	SEZ	IS ENTRY LENGTH ODD?
0023	01565	006004	INB	YES, INCREASE WORD COUNT BY 1
0024	01566	040001	ADA B	GET ADDR OF NEXT ENTRY
0025	01567	027550R	JMP IDLEN	GO COMPARE LENGTHS
0026	01570	073637R	IDCOM STA LRIDA	SET UP PTR TO LOCAL ID
0027	01571	063304R	LDA CMBUF	
0028	01572	073642R	STA RRIDA	& PTR TO ID RECVD FROM REMOTE
0029	01573	004010	IDTST SLB	IS BYTE COUNT ODD?
0030	01574	027607R	JMP IDODD	YES
0031	01575	163637R	LDA LRIDA,I	
0032	01576	153642R	CPA RRIDA,I	DOES LOCAL MATCH REMOTE ID WORD?
0033	01577	002001	RSS	YES
0034	01600	027556R	JMP IDNXT	NO, GO CHECK NEXT ENTRY
0035	01601	037637R	ISZ LRIDA	
0036	01602	037642R	ISZ RRIDA	INC ID ADDR PTRS
0037	01603	044051	ADB M2	& REDUCE BYTE COUNT BY 2
0038	01604	006002	SZB	BYTE COUNT = 0?
0039	01605	027573R	JMP IDTST	NO, CHECK NEXT WORD
0040	01606	027617R	JMP IDOK	YES, THE ID'S DO MATCH
0041	01607	054054	IDODD CPB .1	BYTE COUNT = 1?
0042	01610	002001	RSS	YES
0043	01611	027575R	JMP IDTST+2	NO, CAN CHECK WHOLE WORD
0044	01612	163637R	LDA LRIDA,I	
0045	01613	123642R	XOR RRIDA,I	
0046	01614	013254R	AND HFF00	
0047	01615	002002	SZA	DO THE LEFT BYTES MATCH?
0048	01616	027556R	JMP IDNXT	NO, CHECK NEXT WORD
0049	01617	063640R	IDOK LDA RIDCT	HERE IF ENTIRE ID'S MATCH
0050	01620	043641R	ADA RIDNO	
0051	01621	002004	INA	GET INDEX OF MATCHING ID
0052	01622	173636R	STA IDWD1,I	& SAVE IN 1ST WORD OF ID LIST
0053	01623	063635R	LDA IDTMP	
0054	01624	027647R	JMP STEM	GET EVENT FROM COMPLETION CODE
0055	01625	002400	IDBAD CLA	HERE IF ID'S DO NOT MATCH
0056	01626	173636R	STA IDWD1,I	ZERO 1ST WORD OF ID LIST
0057	01627	063242R	LDA ,27	SET EVENT = BAD ID
0058	01630	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE
0059*				
0060	01631	177745	M27 DEC -27	
0061	01632	000000	,LRID OCT 0	FIXED RECVD IN ADDR, LOCAL LIST
0062	01633	000000	IDCNT OCT 0	# OF BYTES IN RECVD ID SEQ
0063	01634	000000	IDRLN OCT 0	LENGTH OF RECEIVED ID
0064	01635	000000	IDTMP OCT 0	TEMP FOR EDITOR STATUS IN A-REG
0065	01636	000000	IDWD1 OCT 0	ADDR OF WORD 1 OF ID LIST
0066	01637	000000	LRIDA OCT 0	RECVD ID PTR, FROM LOCAL LIST
0067	01640	000000	RIDCT OCT 0	CTR: # OF RECVD ID SEQ IN LIST
0068	01641	000000	RIDNO OCT 0	# OF RECVD ID SEQ IN LIST
0069	01642	000000	RRIDA OCT 0	RECVD ID PTR, RECVD FROM REMOTE
0070*				
0071	01643	000040	ACT5B CLE	SET E = 0: DISCARD ID
0072	01644	063304R	LDA CMBUF	A = ADDR OF CONTRL MESS RECV BUF
0073	01645	067257R	LDB M17	B = -(1 + BUF LENGTH)
0074	01646	017067R	JSB BSCR	RECEIVE CONTROL MESSAGE

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0075* -----
0076 01647 043036R STEM ADA ,13 SET UP MOST EVENT NUMBERS
0077 01650 053242R CPA ,27 LINE ERROR?
0078 01651 040056 ADA ,3 YES, CHANGE EVENT TO "LOW"
0079 01652 026450R JMP SEA GO TO STATE-EVENT-ACTION CIRCLE

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0081* SEND ENQ, RECEIVE CONVERSATIONAL TEXT
0082 01653 002400 ACT6 CLA CODE = 0
0083 01654 016555R JSB SCM SEND CONTROL MESSAGE: ENQ
0084 01655 163275R LDA PRVAC,I
0085 01656 013254R AND HFF00 ISOLATE PREV ACTION
0086 01657 053042R CPA H2000 PREV ACTION = 32?
0087 01660 027663R JMP ++3 YES, BYPASS RESET OF LTO CTR
0088 01661 163274R LDA NLTO,I
0089 01662 173303R STA TOCTR,I RESET LONG-TIMEOUT CTR
0090 01663 002400 CLA
0091 01664 173065R STA TLOG,I ZERO TRANS LOG
0092 01665 163051R LDA ET10,I GET REQ BUFFER ADDR
0093 01666 160000 LDA A,I GET LENGTH OF WRITE BUFFER
0094 01667 167266R LDB ET11,I GET READ BUFFER LENGTH
0095 01670 026013R JMP AC29A RECV CONV TEXT

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0097* INCREMENT RETRY CTR & NO. OF RESPONSE ERRORS
0098 01671 067305R ACT7 LDB LTCS B = ADDR OF 1ST LONG-TERM STAT
0099 01672 044063 ADB ,8 B = ADDR OF 9TH LONG-TERM STAT
0100 01673 134001 ISZ B,I INCREMENT NO. OF RESPONSE ERRORS
0101 01674 000000 NOP NULL IN CASE OF ROLLOVER
0102 01675 033245R IOR ,32 SET BAD-RESPONSE FLAG (BIT 5)
0103 01676 173061R STA MPFLS,I
0104 01677 026057R JMP INTRY INC RETRY CTR & GET EVENT

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0106* SEE IF PRIMARY OR SECONDARY
0107 01700 163066R ACT8 LDA ENVIR,I GET SPECIFIED ENVIRONMENT
0108 01701 002011 SLA,RSS IS STATION PRIMARY?
0109 01702 026155R JMP LOW NO, SECONDARY: SET EVENT = LOW
0110 01703 163063R LDA RTCTR,I
0111 01704 002003 SZA,RSS CTR = 0?
0112 01705 026155R JMP LOW YES
0113 01706 137063R ISZ RTCTR,I YES, RETRY CTR OVERFLOW?
0114 01707 026157R JMP HIGH NO, SET EVENT = HIGH
0115 01710 026155R JMP LOW YES, REPORT ENQ-ENQ CONTENTION

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0117* SET CONTACT-MADE FLAG & POST NORMAL COMP
0118 01711 030054 ACT9 IOR ,1 SET CONTACT-MADE FLAG
0119 01712 173061R STA MPFLS,I

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0121* POST NORMAL COMPLETION
0122 01713 026317R ACT10 JMP SLCXT EXIT WITH COMP STATUS = 0 = OK

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0124*

REPORT:

0125 01714 006404 ACT11 CLB,INB COMP STATUS = 1 =INVALID REQ
 0126 01715 026320R JMP SLCXT+1 P+1 (COMP) RETURN TO PHYSICAL

0128*
 0129 01716 064055 ACT12 LDB ,2 REPORT:
 0130 01717 026320R JMP SLCXT+1 STATUS =2 =REQ INCOMPATL W STATE
 P+1 (COMP) RETURN TO PHYSICAL

0132*
 0133 01720 064056 ACT13 LDB ,3 REPORT:
 0134 01721 026320R JMP SLCXT+1 STATUS =3 =BAD ID
 P+1 (COMP) RETURN TO PHYSICAL

0136*
 0137 01722 064057 ACT14 LDB ,4 REPORT:
 0138 01723 060057 LDA ,4 STATUS =4 =LINE ERROR
 0139 01724 043305R ACXIT ADA LTC5 INC TOTAL # OF LINE ERRORS
 0140 01725 134000 ISZ A,I A=ADDR OF WORD 1, LONG-TERM STAT
 0141 01726 000000 NOP UPDATE LONG-TERM STAT TABLE
 0142 01727 026320R JMP SLCXT+1 NULL IN CASE OF ROLLOVER
 P+1 (COMP) RETURN TO PHYSICAL

0144*
 0145 01730 064060 ACT15 LDB ,5 REPORT:
 0146 01731 010054 AND ,1 STATUS =5 =EOT RECVD
 0147 01732 173061R A15ST STA MPFLS,I EXCEPT FOR CONTACT-MADE FLAG,
 0148 01733 026320R JMP SLCXT+1 INIT MESS-PROC FLAGS
 P+1 (COMP) RETURN TO PHYSICAL

0150*
 0151 01734 064061 ACT16 LDB ,6 REPORT:
 0152 01735 026320R JMP SLCXT+1 STATUS =6 =DLE EOT RECVD
 P+1 (COMP) RETURN TO PHYSICAL

0154*
 0155 01736 064062 ACT17 LDB ,7 REPORT:
 0156 01737 060062 LDA ,7 STATUS =7 =LONG TIMEOUT
 0157 01740 027724R JMP ACXIT INC TOTAL # OF LONG TIMEOUTS
 P+1 (COMP) RETURN TO PHYSICAL

0159*
 0160 01741 064063 ACT18 LDB ,8 REPORT:
 0161 01742 013252R AND HBFFF STATUS =8 =ENG RECVD TO EOT SENT
 0162 01743 033044R IOR H8000 CLEAR BIT 14 (SEND ACK FLAG)
 0163 01744 027732R JMP A15ST SET BIT 15 (RCV ACK FLAG)
 STORE FLAGS & RETURN

0165*
 0166 01745 064064 ACT19 LDB ,9 REPORT:
 0167 01746 026320R JMP SLCXT+1 STATUS = 9 =DATA OVERRUN
 P+1 (COMP) RETURN TO PHYSICAL

0169*
 0170 01747 064065 ACT20 LDB ,10 REPORT:
 0171 01750 026320R JMP SLCXT+1 STATUS =10 =MAX # NAKS RECVD
 P+1 (COMP) RETURN TO PHYSICAL

0173*					REPORT:
0174	01751	067034R	ACT21	LDB ,11	STATUS =11 =MAX # ENQS SENT
0175	01752	013754R		AND HFFDF	CLEAR BAD-RESPONSE FLAG
0176	01753	027732R		JMP A15ST	STORE FLAGS & RETURN
0177	01754	177737	HFFDF	OCT 177737	REVERSE MASK BIT 5
0179*					REPORT:
0180	01755	067035R	ACT22	LDB ,12	STATUS =12 =RVI RECD
0181	01756	043044R		ADA H0000	TOGGLE RECV ACK FLAG (BIT 15)
0182	01757	027732R		JMP A15ST	STORE FLAGS & RETURN
0184*					REPORT:
0185	01760	067036R	ACT23	LDB ,13	STATUS =13 =ENG RECV TO ENG SENT
0186	01761	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0188*					REPORT:
0189	01762	067037R	ACT24	LDB ,14	STATUS =14 =NAK RECV TO ENG SENT
0190	01763	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0192*					REPORT:
0193	01764	064070	ACT25	LDB ,15	STATUS =15 =MAX ENQS FROM CONVER
0194	01765	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0196*					REPORT:
0197	01766	067237R	ACT26	LDB ,16	STATUS =16 =BAD RESPONSE TO TTD
0198	01767	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0200*				SEND TTD, RECEIVE RESPONSE	
0201	01770	060063	ACT27	LDA ,8	
0202	01771	016555R		JSB SCM	SEND CONTROL MESSAGE: TTD
0203	01772	027463R		JMP ACT4A	RESET LTO CTR & RECV RESPONSE
0205*				SEND TEXT, READ RESPONSE	
0206	01773	017002R	ACT28	JSB STXT	SEND TEXT
0207	01774	027463R		JMP ACT4A	RESET LTO CTR & RECV RESPONSE
0209*				SEND TEXT, RECEIVE TEXT	
0210	01775	163051R	ACT29	LDA ET10,I	GET REQUEST BUFFER ADDR
0211	01776	167266R		LDB ET11,I	GET &
0212	01777	177271R		STB CONVL,I	SAVE REQUEST BUFFER LENGTH
0213	02000	160000		LDA A,I	GET LENGTH OF WRITE BUFFER
0214	02001	173266R		STA ET11,I	& PUT INTO EQT 11
0215	02002	137051R		ISZ ET10,I	ADVANCE TO WRITE BUFFER ADDR
0216	02003	017002R		JSB STXT	SEND TEXT IN THE WRITE BUFFER
0217	02004	163274R		LDA NLTO,I	
0218	02005	173303R		STA TOCTR,I	RESET LONG-TIMEOUT CTR
0219	02006	002400		CLA	
0220	02007	173065R		STA TLOG,I	ZERO TRANSMISSION LOG

0221	02010	163266R	LDA ET11,I	GET WRITE BUFFER LENGTH IN BYTES
0222	02011	167271R	LDB CONVL,I	
0223	02012	177266R	STB ET11,I	PUT BACK ORIG IREAD BUFFER LENGTH
0224	02013	003004	AC29A CMA,INA	
0225	02014	000065	CLE,ERA	CHANGE TO POSITIVE WORD COUNT
0226	02015	002040	SEZ	BYTE LENGTH ODD?
0227	02016	002004	INA	YES, ADD ONE TO WORD LENGTH
0228	02017	143051R	ADA ET10,I	A = RECV BUFFER ADDR
0229	02020	044052	ADB M1	B = -(1 + RECV BUFFER LENGTH)
0230	02021	000040	CLE	E = 0; DISCARD ID OR LG
0231	02022	017067R	JSB BSCR	RECEIVE TEXT
0232	02023	027647R	JMP STEM	GET EVENT FROM COMPLETION CODE

0234*			SET RVI FLAG	
0235	02024	070001	ACT30 STA B	
0236	02025	005710	BLF,SLB	RVI FLAG (BIT 12) SET?
0237	02026	026155R	JMP LOW	YES, SET EVENT = LOW (BAD RVI)
0238	02027	033041R	IOR H1000	NO, THEN SET RVI FLAG
0239	02030	173061R	STA MPFLS,I	
0240	02031	026157R	JMP HIGH	SET EVENT = HIGH (GOOD RVI)

0242*			PROCESS RECVD	POSITIVE ACKNOWLEDGEMENT
0243	02032	013253R	ACT31 AND HEFF	CLEAR RVI FLAG
0244	02033	173061R	STA MPFLS,I	
0245	02034	000066	CLE,ELA	PUT ACK0/1 FLAG (BIT 15) INTO E
0246	02035	063037R	LDA ,14	START WITH ACK0 IND
0247	02036	167066R	LDB ENVIR,I	
0248	02037	005710	BLF,SLB	HASP WORKSTATION?
0249	02040	026043R	JMP ++3	YES, ONLY ACK0 VALID
0250	02041	002040	SEZ	CURRENT FLAG = ACK1?
0251	02042	002004	INA	YES, CHANGE TO ACK1 IND
0252	02043	052543R	CPA EVENT	CURRENT EVENT = CORRECT ACK?
0253	02044	026067R	JMP MID	YES, SET EVENT = MID
0254	02045	026155R	JMP LOW	NO, SET EVENT = LOW

0256*			PROCESS SHORT	TIMEOUT (SENDING)
0257	02046	030067	ACT32 IOR B100	& SET MP TIMEOUT FLAG (BIT 6)
0258	02047	173061R	STA MPFLS,I	
0259	02050	163303R	LDA TOCTR,I	
0260	02051	002003	SZA,RSS	LTO CTR = 0?
0261	02052	026055R	JMP ++3	YES
0262	02053	137303R	ISZ TOCTR,I	LONG TIMEOUT CTR OVERFLOW?
0263	02054	026057R	JMP INTRY	NO
0264	02055	063243R	LDA ,29	SET EVENT = 29 = LONG TIMEOUT
0265	02056	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE

ROUTINE TO INCREMENT RETRY COUNTER

0266*				
0267*				
0268*				
0269	02057	163063R	INTRY LDA RTCTR,I	
0270	02060	002003	SZA,RSS	RETRY CTR = 0?
0271	02061	026064R	JMP ++3	YES
0272	02062	137063R	ISZ RTCTR,I	RETRY CTR OVERFLOW?
0273	02063	026071R	JMP MID+2	NO

0274	02064	066543R		LDB EVENT	
0275	02065	063244R		LDA .30	START WITH NEXT EVENT = LOW
0276	02066	057242R		CPB .27	CURRENT EVENT = BAD ID?
0277	02067	063245R	MID	LDA .32	YES, SET EVENT = MID
0278	02070	026450R		JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE
0279	02071	167276R		LDB PRVST,I	GET PREV STATES
0280	02072	002400		CLA	
0281	02073	101110		RRR 8	B = PREV -1, A = PREV (OFFSET)
0282	02074	053251R		CPA H1400	PREV STATE = WRITE CONV (20)?
0283	02075	026067R		JMP MID	YES, SET EVENT = MID
0284	02076	060071		LDA .31	NO, START WITH EVENT = HIGH
0285	02077	057240R		CPB .20	PREV -1 STATE = WRITE CONV?
0286	02100	026067R		JMP MID	YES, SET EVENT = MID
0287	02101	026450R		JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE
0289*				INCREMENT RETRY COUNTER	
0290	02102	026067R	ACT33	JMP INTRY	INCREMENT RETRY COUNTER
0292*				CHECK TIMEOUT & BAD RESPONSE FLAGS	
0293	02103	001727	ACT34	ALF,ALF	
0294	02104	001222		RAL,RAL	
0295	02105	002011		SLA,RSS	MP TIMEOUT FLAG SET (BIT 6 =1)?
0296	02106	026155R		JMP LOW	NO, SET EVENT =LOW
0297	02107	002020		SSA	BAD RESPONSE FLAG SET (BIT 5 =1)
0298	02110	026155R		JMP LOW	YES, SET EVENT =LOW
0299	02111	163276R		LDA PRVST,I	
0300	02112	013254R		AND HFF00	ISOLATE PREV-1 STATE
0301	02113	053251R		CPA H1400	PREV-1 STATE =WRITE CONV (20)?
0302	02114	026067R		JMP MID	YES, SET EVENT =MID
0303	02115	026157R		JMP HIGH	NO, SET EVENT =HIGH
0305*				PROCESS ENQ RECVD IN WRITE	
0306	02116	064064	ACT35	LDB .9	INC # OF PREV-RESP ENQS RECVD,
0307	02117	047305R		ADB LTCS	WORD 10 OF LONG-TERM STAT
0308	02120	134001		ISZ R,I	
0309	02121	000000		NOP	NULL IN CASE OF ROLLOVER
0310	02122	001727		ALF,ALF	
0311	02123	000010		SLA	ENQ JUST SENT (BIT 8 =1)?
0312	02124	026067R		JMP MID	YES, SET EVENT = MID
0313	02125	002020		SSA	TEXT JUST RECVD (BIT 7 =1)?
0314	02126	026157R		JMP HIGH	YES, SET EVENT = HIGH
0315	02127	026155R		JMP LOW	NO, SET EVENT = LOW
0317*				PROCESS SHORT TIMEOUT, RECEIVING	
0318	02130	063243R	ACT36	LDA .29	START WITH EVENT = LONG TIMEOUT
0319	02131	167303R		LDB TOCTR,I	
0320	02132	006003		SZB,RSS	LTO CTR =0?
0321	02133	026450R		JMP SEA	YES
0322	02134	137303R		ISZ TOCTR,I	INCREMENT TIMEOUT CTR
0323	02135	002001		RSS	NO OVFL0
0324	02136	026450R		JMP SEA	OVFL0: STATE-EVENT-ACTION CIRCLE
0325	02137	163302R		LDA STATE,I	

0326	02140	050055	CPA ,2	CURRENT STATE = READ ENQ?
0327	02141	027515R	JMP ACT5A	YES, RECV RESPONSE & ID, IF ANY
0328	02142	026204R	JMP AC38C	NO, RECEIVE TEXT

0330*			CHECK READ REQUEST TYPE	
0331	02143	013252R	ACT37 AND MBFFF	CLEAR BIT 14 (SEND ACK FLAG)
0332	02144	033044R	IOR H8000	SET BIT 15 (RECV ACK FLAG)
0333	02145	173061R	STA MPFLS,I	
0334	02146	163272R	LDA CURRQ,I	GET CURRENT READ REQUEST #
0335	02147	050056	CPA ,3	CURRENT REQ = 3 (READ INITIAL)?
0336	02150	026157R	JMP HIGH	YES, SET EVENT = HIGH
0337	02151	163276R	LDA PRVST,I	
0338	02152	013254R	AND HFF00	ISOLATE PREV=1 STATE
0339	02153	053040R	CPA B4000	PREV=1 STATE = 8 (RESTRICTED READ)
0340	02154	026067R	JMP MID	YES, SET EVENT = MID
0341	02155	063244R	LOW LDA ,30	SET EVENT = LOW
0342	02156	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE
0343	02157	060071	HIGH LDA ,31	SET EVENT = HIGH
0344	02160	026450R	JMP SEA	GO TO STATE-EVENT-ACTION CIRCLE

0346*			SEND ACK, RECV TEXT	
0347	02161	016762R	ACT38 JSB SIDIF	SEND ID SEQUENCE IF NECESSARY
0348	02162	017776R	JSB BSCT	SEND ID
0349	02163	000000	OCT 0	SPECIFY NO ENDING OR INC
0350	02164	016546R	JSB ENSEN	CHECK SEND & SET SEND=CONT FLAG
0351	02165	060056	LDA ,3	START WITH MESSAGE CODE FOR ACK0
0352	02166	167066R	LDB ENVIR,I	GET SPECIFIED ENVIRONMENT
0353	02167	005710	BLF,SLB	HASP WORKSTATION?
0354	02170	026175R	JMP AC38A	YES, SEND ONLY ACK0
0355	02171	167061R	LDB MPFLS,I	GET SEND ACK FLAG (BIT 14)
0356	02172	005200	RBL	
0357	02173	006020	SSB	ACK0 TO BE SENT (BIT 14 = 0)?
0358	02174	002004	INA	NO
0359	02175	173277R	AC38A STA PVACK,I	SET UP PREV ACK
0360	02176	016555R	AC38D JSB SCM	SEND ACK
0361	02177	163061R	LDA MPFLS,I	
0362	02200	010050	AND M3	CLEAR SEND-CONTINUE FLAG (BIT 1)
0363	02201	173061R	STA MPFLS,I	
0364	02202	163274R	LDA NLTO,I	
0365	02203	173303R	STA TOCTR,I	RESET LONG-TIMEOUT CTR
0366	02204	002400	AC38C CLA	
0367	02205	173065R	STA TLOG,I	ZERO TRANSMISSION LOG
0368	02206	163051R	LDA ET10,I	A = RECV BUFFER ADDR
0369	02207	167266R	LDB ET11,I	
0370	02210	044052	ADB M1	B = (1 + RECV BUFFER LENGTH)
0371	02211	000040	CLE	SET E = 0; DISCARD ID OR LG
0372	02212	017067R	JSB BSCT	RECEIVE TEXT
0373	02213	027647R	JMP STEM	GET EVENT FROM COMPLETION CODE

0375*			SEND PREV ACK, RECEIVE TEXT	
0376	02214	016762R	ACT39 JSB SIDIF	SEND ID IF NECESSARY
0377	02215	017776R	JSB BSCT	SEND ID
0378	02216	000000	OCT 0	SPECIFY NO ENDING OR INC

0379	02217	016546R		JSB ENSEN	CHECK SEND & SET SEND-CONT FLAG
0380	02220	064064		LDB ,9	INC # OF PREV-RESP ENQS RECVD,
0381	02221	047305R		ADB LTCS	WORD 10 OF LONG-TERM STAT
0382	02222	134001		ISZ B,I	
0383	02223	000000		NOP	NULL IN CASE OF ROLLOVER
0384	02224	163277R		LDA PVACK,I	GET MESSAGE CODE FOR PREV ACK
0385	02225	026176R		JMP AC38D	SEND CONTROL MESSAGE; PREV ACK
0387*				SEND NAK, RECEIVE TEXT	
0388	02226	016762R	ACT40	JSB SIDIF	SEND ID, IF NECESSARY
0389	02227	017776R		JSB BSCT	SEND ID
0390	02230	000000		OCT 0	SPECIFY NO ENDING OR INC
0391	02231	016546R		JSB ENSEN	CHECK SEND & SET SEND-CONT FLAG
0392	02232	002404		CLA,INA	
0393	02233	173277R		STA PVACK,I	SET UP PREV ACK
0394	02234	026176R		JMP AC38D	SEND CONTROL MESSAGE; NAK
0396*				RECEIVE RESPONSE	
0397	02235	163274R	ACT41	LDA NLTO,I	
0398	02236	173303R		STA TOCTR,I	RESET LONG-TIMEOUT CTR
0399	02237	027515R		JMP ACT5A	RECV RESPONSE, CHECK ID, IF ANY
0401*				INC MESSAGE ERRORS, RECV TEXT	
0402	02240	060061	ACT42	LDA ,6	
0403	02241	043305R		ADA LTCS	A #ADDR OF WORD 7, LONG-TERM STAT
0404	02242	134000		ISZ A,I	UPDATE MESSAGE ERROR STAT
0405	02243	000000		NOP	NULL IN CASE OF ROLLOVER
0406	02244	026204R		JMP AC38C	RECV TEXT BUT DONT RESET TIMER
0408*				SEND WACK, RECV RESPONSE	
0409	02245	060060	ACT43	LDA ,5	
0410	02246	027771R		JMP ACT27+1	SEND WACK, RESET LTO, RECV RESP
0412*				SEND RVI, RECV TEXT	
0413	02247	060061	ACT44	LDA ,6	SET UP PREV ACK, SEND RVI,
0414	02250	026233R		JMP ACT40+5	
0416*				REPORT IMPOSSIBLE SITUATION	
0417	02251	064066	ACT45	LDB ,17	STATUS =17 =IMPOSSIBLE SITUATION
0418	02252	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0420*				SEND DLE-EOT (DISCONNECT)	
0421	02253	060062	ACT46	LDA ,7	
0422	02254	027451R		JMP ACT3+1	SEND DLE-EOT CONTROL MESSAGE
0424*				INC. MESSAGE ERRORS, READ RESPONSE	
0425	02255	060061	ACT47	LDA ,6	
0426	02256	043305R		ADA LTCS	A #ADDR OF WORD 7, LONG-TERM STAT

0427	02257	134000		ISZ A,I	UPDATE MESSAGE ERROR STAT
0428	02260	000000		NOP	NULL IN CASE OF ROLLOVER
0429	02261	002400		CLA	SINCE READ ERROR, ALLOW TIMEOUT;
0430	02262	073046R		STA NOM3	DONT RESTART 3-SEC TIMEOUT
0431	02263	027515R		JMP ACT5A	RCV RESPONSE

0433*				TOGGLE RCV ACK FLAG	
0434	02264	043044R	ACT48	ADA H8000	TOGGLE RCV ACK FLAG (BIT 15)
0435	02265	027711R		JMP ACT9	SET CNTACT-MADE FLG,STORE,& RETN

0437*				SEND NAK BECAUSE OF ERROR, RECEIVE TEXT	
0438	02266	064061	ACT49	LDB .6	
0439	02267	047305R		ADB LTC5	B =ADDR OF WORD M, LONG-TERM ST
0440	02270	134001		ISZ B,I	UPDATE MESSAGE-ERROR STAT
0441	02271	000000		NOP	NULL IN CASE OF ROLLOVER
0442	02272	001323		RAR,RAR	
0443	02273	002011		SLA,RSS	NAK SENDING DISABLED (BIT 2 =1)?
0444	02274	026232R		JMP ACT40+4	NO; SEND NAK, RCV TEXT
0445	02275	066277R		LDB .18	YES; STATUS #18 =BAD BCC ETC.
0446	02276	026320R		JMP SLCXT+1	P+1 (COMP) RETURN TO PHYSICAL
0447	02277	000022	.18	DEC 18	

0448*					
0449*				SET RCV ACK, CLEAR SEND ACK FLAG + ACT 9	
0450	02300	013252R	ACT50	AND H8FFF	CLEAR BIT 14 (SEND ACK FLAG)
0451	02301	033044R		IOR H8000	SET BIT 15 (RCV ACK FLAG)
0452	02302	027711R		JMP ACT9	SET CNTACT-MADE FLG,STORE,& RETN

0454*				TOGGLE SEND ACK FLAG + ACT 9	
0455	02303	001200	ACT51	RAL	
0456	02304	043044R		ADA H8000	TOGGLE SEND ACK FLAG (BIT 14)
0457	02305	001300		RAR	
0458	02306	027711R		JMP ACT9	SET CNTACT-MADE FLG,STORE,& RETN

0460*				TOGGLE SEND ACK & RCV ACK FLAGS + ACT 9	
0461	02307	043044R	ACT52	ADA H8000	TOGGLE RCV ACK FLAG (BIT 15)
0462	02310	026303R		JMP ACT51	

0464*				ACTION ADDRESS TABLE	
0465*					
0466	02311	002311R	ACTAD	DEF *	
0467	02312	001433R		DEF ACT1	
0468	02313	001447R		DEF ACT2	
0469	02314	001450R		DEF ACT3	
0470	02315	001456R		DEF ACT4	
0471	02316	001466R		DEF ACT5	
0472	02317	001653R		DEF ACT6	
0473	02320	001671R		DEF ACT7	
0474	02321	001700R		DEF ACT8	

0475	02322	001711R	DEF ACT9
0476	02323	001713R	DEF ACT10
0477	02324	001714R	DEF ACT11
0478	02325	001716R	DEF ACT12
0479	02326	001720R	DEF ACT13
0480	02327	001722R	DEF ACT14
0481	02330	001730R	DEF ACT15
0482	02331	001734R	DEF ACT16
0483	02332	001736R	DEF ACT17
0484	02333	001741R	DEF ACT18
0485	02334	001745R	DEF ACT19
0486	02335	001747R	DEF ACT20
0487	02336	001751R	DEF ACT21
0488	02337	001755R	DEF ACT22
0489	02340	001760R	DEF ACT23
0490	02341	001762R	DEF ACT24
0491	02342	001764R	DEF ACT25
0492	02343	001766R	DEF ACT26
0493	02344	001770R	DEF ACT27
0494	02345	001773R	DEF ACT28
0495	02346	001775R	DEF ACT29
0496	02347	002024R	DEF ACT30
0497	02350	002032R	DEF ACT31
0498	02351	002046R	DEF ACT32
0499	02352	002102R	DEF ACT33
0500	02353	002103R	DEF ACT34
0501	02354	002116R	DEF ACT35
0502	02355	002130R	DEF ACT36
0503	02356	002143R	DEF ACT37
0504	02357	002161R	DEF ACT38
0505	02360	002214R	DEF ACT39
0506	02361	002226R	DEF ACT40
0507	02362	002235R	DEF ACT41
0508	02363	002240R	DEF ACT42
0509	02364	002245R	DEF ACT43
0510	02365	002247R	DEF ACT44
0511	02366	002251R	DEF ACT45
0512	02367	002253R	DEF ACT46
0513	02370	002255R	DEF ACT47
0514	02371	002264R	DEF ACT48
0515	02372	002266R	DEF ACT49
0516	02373	002300R	DEF ACT50
0517	02374	002303R	DEF ACT51
0518	02375	002307R	DEF ACT52

0520* MESSAGE PROCESSOR STATE DEFINITIONS
 0521*

0001	00000	UNOPN EQU 0	UNOPENED
0002	00001	CNTRL EQU 1	CONTROL -- WAITING FOR USER REQ
0003	00002	RENG EQU 2	READ ENG
0004	00003	RERR EQU 3	"READ ENG" ERROR
0005	00004	RREQ EQU 4	CHECK READ REQUEST TYPE
0006	00005	READ EQU 5	READ -- WAITING FOR READ REQ
0007	00006	RTEXT EQU 6	READ TEXT
0008	00007	RRVI EQU 7	READ RVI -- IS RVI VALID
0009	00010	RREAD EQU 8	RESTRICTED READ -- ENG AFTER EOT
0010	00011	WENG EQU 9	WRITE ENG
0011	00012	ERRWE EQU 10	"WRITE ENG" ERROR
0012	00013	EN,EN EQU 11	ENG-ENG CONTENTION
0013	00014	WRITE EQU 12	WRITE -- WAITING FOR WRITE REQ
0014	00015	WTEXT EQU 13	WRITE TEXT
0015	00016	WPREV EQU 14	WRITE PREVIOUS RESPONSE ENG
0016	00017	CKRES EQU 15	CHECK RESPONSE
0017	00020	BDACK EQU 16	BAD ACK RECEIVED
0018	00021	WRTRY EQU 17	WRITE RETRY
0019	00022	WRENG EQU 18	ENG RECEIVED IN WRITE OR CONV
0020	00023	WRNG2 EQU 19	2ND STATE, ENG RECVD IN WRITE
0021	00024	WCONV EQU 20	WRITE CONVERSATIONAL
0022	00025	WEOT EQU 21	WRITE EOT
0023	00026	REOTR EQU 22	READ EOT RESPONSE
0024	00027	HNGUP EQU 23	HANG UP -- IDLE EOT RECEIVE
0025	00030	WTTD EQU 24	WRITE TTD - WAITING FOR RESPONSE

0027* STATE ADDRESS TABLE

0028*

0029	02376	002377R	STADT DEF ++1
0030	02377	002431R	DEF ST00
0031	02400	002450R	DEF ST01
0032	02401	002467R	DEF ST02
0033	02402	002511R	DEF ST03
0034	02403	002514R	DEF ST04
0035	02404	002520R	DEF ST05
0036	02405	002537R	DEF ST06
0037	02406	002561R	DEF ST07
0038	02407	002564R	DEF ST08
0039	02410	002603R	DEF ST09
0040	02411	002625R	DEF ST10
0041	02412	002632R	DEF ST11
0042	02413	002635R	DEF ST12
0043	02414	002654R	DEF ST13
0044	02415	002676R	DEF ST14
0045	02416	002703R	DEF ST15
0046	02417	002707R	DEF ST16
0047	02420	002713R	DEF ST17
0048	02421	002717R	DEF ST18
0049	02422	002723R	DEF ST19
0050	02423	002727R	DEF ST20
0051	02424	002751R	DEF ST21
0052	02425	002754R	DEF ST22
0053	02426	002772R	DEF ST23

0054 02427 003011R DEF ST24
 0055 02430 003033R DEF ST25

0057* STATE TRANSITION TABLE

0058*

0059*

0060*

STATE 0: UNOPN - UNOPENED

0061	02431	000015	ST00	ABS	EV00+13	-----
0062	02432	000401		ABS	AC01+CNTRL	REQUEST: LINE OPEN
0063	02433	005400		ABS	AC11+UNOPN	REQUEST: LINE CLOSE
0064	02434	005400		ABS	AC11+UNOPN	REQUEST: READ ENQ
0065	02435	005400		ABS	AC11+UNOPN	REQUEST: READ INITIAL
0066	02436	005400		ABS	AC11+UNOPN	REQUEST: READ CONTINUE
0067	02437	005400		ABS	AC11+UNOPN	REQUEST: READ REPEAT
0068	02440	005400		ABS	AC11+UNOPN	REQUEST: READ WITH RVI
0069	02441	005400		ABS	AC11+UNOPN	REQUEST: DELAY READ
0070	02442	005400		ABS	AC11+UNOPN	REQUEST: WRITE ENQ
0071	02443	005400		ABS	AC11+UNOPN	REQUEST: WRITE CONTINUE
0072	02444	005400		ABS	AC11+UNOPN	REQUEST: WRITE CONVERSATNAL
0073	02445	005400		ABS	AC11+UNOPN	REQUEST: WRITE EOT
0074	02446	005400		ABS	AC11+UNOPN	REQUEST: WRITE DISCONNECT
0075	02447	005400		ABS	AC11+UNOPN	REQUEST: DELAY WRITE

0076*

0077*

0078*

STATE 1: CNTRL - CONTROL

0079	02450	000015	ST01	ABS	EV00+13	-----
0080	02451	006001		ABS	AC12+CNTRL	REQUEST: LINE OPEN
0081	02452	001000		ABS	AC02+UNOPN	REQUEST: LINE CLOSE
0082	02453	024402		ABS	AC41+RENG	REQUEST: READ ENQ
0083	02454	024402		ABS	AC41+RENG	REQUEST: READ INIT
0084	02455	006001		ABS	AC12+CNTRL	REQUEST: READ CONT
0085	02456	006001		ABS	AC12+CNTRL	REQUEST: READ REPEAT
0086	02457	006001		ABS	AC12+CNTRL	REQUEST: READ WITH RVI
0087	02460	006001		ABS	AC12+CNTRL	REQUEST: DELAY READ
0088	02461	002411		ABS	AC05+WENG	REQUEST: WRITE ENQ
0089	02462	006001		ABS	AC12+CNTRL	REQUEST: WRITE CONTINUE
0090	02463	006001		ABS	AC12+CNTRL	REQUEST: WRITE CONV
0091	02464	001425		ABS	AC03+WEOT	REQUEST: WRITE EOT
0092	02465	027025		ABS	AC46+WEOT	REQUEST: WRITE DISCONNECT
0093	02466	006001		ABS	AC12+CNTRL	REQUEST: DELAY WRITE

0094*

0095*

0096*

STATE 2: RENQ - READ ENQ

0097	02467	007020	ST02	ABS	EV14+16	-----
0098	02470	027402		ABS	AC47+RENG	ACK0 RECVD
0099	02471	027402		ABS	AC47+RENG	ACK1 RECVD
0100	02472	027402		ABS	AC47+RENG	NACK RECVD
0101	02473	027402		ABS	AC47+RENG	RVI RECVD
0102	02474	022404		ABS	AC37+RREQ	ENQ RECVD
0103	02475	027402		ABS	AC47+RENG	NAK RECVD
0104	02476	007401		ABS	AC15+CNTRL	EOT RECVD
0105	02477	010027		ABS	AC16+HNGUP	DLE EOT RECVD
0106	02500	027402		ABS	AC47+RENG	TTD RECVD

0107	02501	027402	ABS	AC47+RENO	TEXT RECVD
0108	02502	027402	ABS	AC47+RENO	BAD TEXT RECVD
0109	02503	027402	ABS	AC47+RENO	TEXT OVERRUN
0110	02504	027402	ABS	AC47+RENO	GARBAGE RECVD
0111	02505	020403	ABS	AC33+RERR	BAD ID
0112	02506	022002	ABS	AC36+RENO	SHORT TIMEOUT
0113	02507	010401	ABS	AC17+CNTRL	LONG TIMEOUT
0114	02510	007001	ABS	AC14+CNTRL	LOW (LINE ERROR)
0115*					
0116*			STATE 3:	RERR - "READ ENQ" ERROR	
0117*					
0118	02511	017401	ST03	ABS EV31+1	-----
0119	02512	027402		ABS AC47+RENO	HIGH (NO OVERFLOW)
0120	02513	006401		ABS AC13+CNTRL	MID (CTR OVERFLOW & BAD ID)
0121*					
0122*			STATE 4:	RREQ - CHECK READ REQUEST TYPE	
0123*					
0124	02514	017002	ST04	ABS EV30+2	-----
0125	02515	005005		ABS AC10+READ	LOW=READ ENQ OR DELAY, READ
0126	02516	023006		ABS AC38+RTEXT	HIGH=READ INITIAL, READ ST
0127	02517	005010		ABS AC10+RREAD	MID=READ DELAY, RESTCT READ
0128*					
0129*			STATE 5:	READ - READ -- WAITING FOR READ REQ	
0130*					
0131	02520	000015	ST05	ABS EV00+13	-----
0132	02521	006005		ABS AC12+READ	REQUEST: LINE OPEN
0133	02522	001000		ABS AC02+UNOPN	REQUEST: LINE CLOSE
0134	02523	006005		ABS AC12+READ	REQUEST: READ ENQ
0135	02524	006005		ABS AC12+READ	REQUEST: READ INIT
0136	02525	023006		ABS AC38+RTEXT	REQUEST: READ CONT
0137	02526	024006		ABS AC40+RTEXT	REQUEST: READ REPEAT
0138	02527	017007		ABS AC30+RRVI	REQUEST: READ WITH RVI
0139	02530	025402		ABS AC43+RENO	REQUEST: DELAY READ
0140	02531	006005		ABS AC12+READ	REQUEST: WRITE ENQ
0141	02532	016015		ABS AC28+WTEXT	REQUEST: WRITE CONTINUE
0142	02533	016424		ABS AC29+WCONV	REQUEST: WRITE CONV
0143	02534	001425		ABS AC03+WEO	REQUEST: WRITE EOT
0144	02535	027025		ABS AC46+WEO	REQUEST: WRITE DISCONNECT
0145	02536	006005		ABS AC12+READ	REQUEST: DELAY WRITE
0146*					
0147*			STATE 6:	RTEXT - READ TEXT	
0148*					
0149	02537	007020	ST06	ABS EV14+16	-----
0150	02540	025006		ABS AC42+RTEXT	ACK0 RECVD
0151	02541	025006		ABS AC42+RTEXT	ACK1 RECVD
0152	02542	025006		ABS AC42+RTEXT	NACK RECVD
0153	02543	025006		ABS AC42+RTEXT	RVI RECVD
0154	02544	023406		ABS AC39+RTEXT	ENQ
0155	02545	025006		ABS AC42+RTEXT	NAK
0156	02546	007401		ABS AC15+CNTRL	EOT
0157	02547	010027		ABS AC16+HNGUP	DLE EOT RECVD
0158	02550	024006		ABS AC40+RTEXT	TTD RECVD
0159	02551	031405		ABS AC51+READ	TEXT RECVD
0160	02552	030406		ABS AC49+RTEXT	BAD TEXT RECVD
0161	02553	011405		ABS AC19+READ	TEXT OVERRUN
0162	02554	025006		ABS AC42+RTEXT	GARBAGE RECVD

0163	02555	026401	ABS	AC45+CNTRL	BAD ID
0164	02556	022006	ABS	AC36+RTEXT	SHORT TIMEOUT
0165	02557	010401	ABS	AC17+CNTRL	LONG TIMEOUT
0166	02560	007001	ABS	AC14+CNTRL	LOW (LINE ERROR)
0167*					
0168*			STATE 7:	RRVI - READ RVI -- IS RVI VALID	
0169*					
0170	02561	017001	ST07	ABS EV30+1	-----
0171	02562	006005		ABS AC12+READ	LOW (2ND RVI REQUEST)
0172	02563	026006		ABS AC44+RTEXT	HIGH (OK TO SEND RVI)
0173*					
0174*			STATE 8:	RREAD - RESTRICTED READ	
0175*					
0176	02564	000015	ST08	ABS EV00+13	-----
0177	02565	006010		ABS AC12+RREAD	REQUEST: LINE OPEN
0178	02566	001000		ABS AC02+UNOPN	REQUEST: LINE CLOSE
0179	02567	006010		ABS AC12+RREAD	REQUEST: READ ENQ
0180	02570	006010		ABS AC12+RREAD	REQUEST: READ INIT
0181	02571	023006		ABS AC38+RTEXT	REQUEST: READ CONT
0182	02572	024006		ABS AC40+RTEXT	REQUEST: READ REPEAT
0183	02573	006010		ABS AC12+RREAD	REQUEST: READ WITH RVI
0184	02574	025402		ABS AC43+RENG	REQUEST: DELAY READ
0185	02575	006010		ABS AC12+RREAD	REQUEST: WRITE ENQ
0186	02576	006010		ABS AC12+RREAD	REQUEST: WRITE CONTINUE
0187	02577	006010		ABS AC12+RREAD	REQUEST: WRITE CONV
0188	02600	001425		ABS AC03+WEOE	REQUEST: WRITE EOT
0189	02601	027025		ABS AC46+WEOE	REQUEST: WRITE DISCONNECT
0190	02602	006010		ABS AC12+RREAD	REQUEST: DELAY WRITE
0191*					
0192*			STATE 9:	WENG - WRITE ENQ	
0193*					
0194	02603	007020	ST09	ABS EV14+16	-----
0195	02604	031014		ABS AC50+WRITE	ACK0 RECVD
0196	02605	003412		ABS AC07+ERRWE	ACK1 RECVD
0197	02606	002411		ABS AC05+WENG	WACK RECVD
0198	02607	003412		ABS AC07+ERRWE	RVI RECVD
0199	02610	004013		ABS AC08+EN,EN	ENQ
0200	02611	014001		ABS AC24+CNTRL	NAK
0201	02612	007401		ABS AC15+CNTRL	EOT
0202	02613	010027		ABS AC16+HNGUP	DLE EOT RECVD
0203	02614	003412		ABS AC07+ERRWE	TTD RECVD
0204	02615	003412		ABS AC07+ERRWE	TEXT RECVD
0205	02616	003412		ABS AC07+ERRWE	BAD TEXT RECVD
0206	02617	003412		ABS AC07+ERRWE	TEXT OVERRUN
0207	02620	003412		ABS AC07+ERRWE	GARBAGE RECVD
0208	02621	003412		ABS AC07+ERRWE	BAD ID
0209	02622	020012		ABS AC32+ERRWE	SHORT TIMEOUT
0210	02623	026401		ABS AC45+CNTRL	LONG TIMEOUT
0211	02624	007001		ABS AC14+CNTRL	LOW (LINE ERROR)
0212	02623		BLOUT EQU	ST09+16	ACTION STATE FOR IMPROBABLE ERR
0213*					
0214*			STATE 10:	ERRWE - "WRITE ENQ" ERROR	
0215*					
0216	02625	016403	ST10	ABS EV29+3	-----
0217	02626	010401		ABS AC17+CNTRL	LONG TIMEOUT
0218	02627	012401		ABS AC21+CNTRL	LOW (CTR OVFLD, NO BAD ID)

0219	02630	002411	ABS	AC05+WENG	HIGH (NO OVFL0)
0220	02631	006401	ABS	AC13+CNTRL	MID (CTR OVFL0, BAD ID)
0221*					
0222*			STATE 11:	EN,EN - ENG=ENG	CONTENTION
0223*					
0224	02632	017001	ST11	ABS EV30+1	-----
0225	02633	013401		ABS AC23+CNTRL	LOW (SECONDARY OR CTR OFLOW)
0226	02634	002411		ABS AC05+WENG	HIGH (PRIMARY)
0227*					
0228*			STATE 12:	WRITE - WRITE	-- WAITING FOR WRITE REQ
0229*					
0230	02635	000015	ST12	ABS EV00+13	-----
0231	02636	006014		ABS AC12+WRITE	REQUEST: LINE OPEN
0232	02637	001000		ABS AC02+UNOPN	REQUEST: LINE CLOSE
0233	02640	006014		ABS AC12+WRITE	REQUEST: READ ENG
0234	02641	006014		ABS AC12+WRITE	REQUEST: READ INIT
0235	02642	006014		ABS AC12+WRITE	REQUEST: READ CONT
0236	02643	006014		ABS AC12+WRITE	REQUEST: READ REPEAT
0237	02644	006014		ABS AC12+WRITE	REQUEST: READ WITH RVI
0238	02645	006014		ABS AC12+WRITE	REQUEST: DELAY READ
0239	02646	006014		ABS AC12+WRITE	REQUEST: WRITE ENG
0240	02647	016015		ABS AC28+WTEXT	REQUEST: WRITE CONTINUE
0241	02650	016424		ABS AC29+WCONV	REQUEST: WRITE CONV
0242	02651	002026		ABS AC04+REOTR	REQUEST: WRITE EQT
0243	02652	027025		ABS AC46+WBOT	REQUEST: WRITE DISCONNECT
0244	02653	015430		ABS AC27+WTTD	REQUEST: DELAY WRITE
0245*					
0246*			STATE 13:	WTEXT - WRITE	TEXT
0247*					
0248	02654	007020	ST13	ABS EV14+16	-----
0249	02655	017417		ABS AC31+CKRES	ACK0 RECVD
0250	02656	017417		ABS AC31+CKRES	ACK1 RECVD
0251	02657	002415		ABS AC05+WTEXT	WACK RECVD
0252	02660	017017		ABS AC30+CKRES	RVI RECVD
0253	02661	021422		ABS AC35+WRENG	ENG RECVD
0254	02662	020421		ABS AC33+WRTRY	NAK RECVD
0255	02663	007401		ABS AC15+CNTRL	EOT RECVD
0256	02664	010027		ABS AC16+HNGUP	DLE EOT RECVD
0257	02665	003416		ABS AC07+WPREV	TTD RECVD
0258	02666	003416		ABS AC07+WPREV	TEXT RECVD
0259	02667	003416		ABS AC07+WPREV	BAD TEXT RECVD
0260	02670	003416		ABS AC07+WPREV	TEXT OVERRUN
0261	02671	003416		ABS AC07+WPREV	GARBAGE RECVD
0262	02672	003416		ABS AC07+WPREV	BAD ID
0263	02673	020016		ABS AC32+WPREV	SHORT TIMEOUT
0264	02674	026401		ABS AC45+CNTRL	LONG TIMEOUT (NOT EXECTED)
0265	02675	007001		ABS AC14+CNTRL	LOW (LINE ERROR)
0266*					
0267*			STATE 14:	WPREV - WRITE	PREVIOUS RESPONSE ENG
0268*					
0269	02676	016403	ST14	ABS EV29+3	-----
0270	02677	010401		ABS AC17+CNTRL	LONG TIMEOUT
0271	02700	012401		ABS AC21+CNTRL	LOW: CTR OVERFLOW
0272	02701	002415		ABS AC05+WTEXT	HIGH: WRITE, NO OVERFLOW
0273	02702	003024		ABS AC06+WCONV	MID: WRITE CONV, NO OVFLOW
0274*					

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0275*          STATE 15: CKRES - CHECK RESPONSE
0276*
0277 02703 017002 ST15 ABS EV30+2 -----
0278 02704 021020      ABS AC34+BDACK      LOW (BAD ACK)
0279 02705 013014      ABS AC22+WRITE      HIGH (RVI RECVD)
0280 02706 030014      ABS AC48+WRITE      MID (GOOD ACK)
0281*
0282*          STATE 16: BDACK - BAD ACK RECEIVED
0283*
0284 02707 017002 ST16 ABS EV30+2 -----
0285 02710 003416      ABS AC07+WPREV      LOW: T/O FLAG NOT SET OR
0286*                      BR FLAG SET
0287 02711 016015      ABS AC28+WTEXT      HIGH: WRITE, T/O FLAG SET &
0288*                      BR FLAG NOT SET
0289 02712 016424      ABS AC29+WCONV      MID: WRITE CONV, " "
0290*
0291*          STATE 17: WRTRY - WRITE RETRY
0292*
0293 02713 017002 ST17 ABS EV30+2 -----
0294 02714 012001      ABS AC20+CNTRL      LOW (CTR OVERFLOW)
0295 02715 016015      ABS AC28+WTEXT      HIGH (WRITE, NO OVFL0)
0296 02716 016424      ABS AC29+WCONV      MID (WRITE CONV, NO OVFL0)
0297*
0298*          STATE 18: WRENG - ENG RECVD IN WRITE OR CONV
0299*
0300 02717 017002 ST18 ABS EV30+2 -----
0301 02720 003416      ABS AC07+WPREV      LOW (TEXT NOT JJUST RECVD)
0302 02721 003423      ABS AC07+WRNG2      HIGH (TEXT RECVD,ENG NOT X)
0303 02722 013401      ABS AC23+CNTRL      MID (ENG JUST SENT)
0304*
0305*          STATE 19: WRNG2 - 2ND STATE, ENG RECVD IN WRITE
0306*
0307 02723 017002 ST19 ABS EV30+2 -----
0308 02724 014401      ABS AC25+CNTRL      LOW (CTR OVERFLOW)
0309 02725 016015      ABS AC28+WTEXT      HIGH (NO OVFL0, WRITE)
0310 02726 016424      ABS AC29+WCONV      MID (NO OVFL0, WRITE CONV)
0311*
0312*          STATE 20: WCONV - WRITE CONVERSATIONAL
0313*
0314 02727 007020 ST20 ABS EV14+16 -----
0315 02730 017417      ABS AC31+CKRES      ACK0 RECVD
0316 02731 017417      ABS AC31+CKRES      ACK1 RECVD
0317 02732 003024      ABS AC06+WCONV      WACK RECVD
0318 02733 017017      ABS AC30+CKRES      RVI RECVD
0319 02734 021422      ABS AC35+WRENG      ENG RECVD
0320 02735 020421      ABS AC33+WRTRY      NAK RECVD
0321 02736 007401      ABS AC15+CNTRL      EOT RECVD
0322 02737 010027      ABS AC16+HNGUP      DLE EOT RECVD
0323 02740 024024      ABS AC40+WCONV      TTD RECVD
0324 02741 032005      ABS AC52+READ      TEXT RECVD
0325 02742 030424      ABS AC49+WCONV      BAD TEXT RECVD
0326 02743 011405      ABS AC19+READ      TEXT OVERRUN
0327 02744 003416      ABS AC07+WPREV      GARBAGE RECVD
0328 02745 026401      ABS AC45+CNTRL      BAD ID (NOT EXPECTED)
0329 02746 020016      ABS AC32+WPREV      SHOFT TIMEOUT
0330 02747 026401      ABS AC45+CNTRL      LONG TIMEOUT (NOT EXECTED)

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0331 02750 007001      ABS AC14+CNTRL      LOW (LINE ERROR)
0332*
0333*      STATE 21:  WEOT  - WRITE EOT
0334*
0335 02751 017001      ST21  ABS EV30+1      -----
0336 02752 007001      ABS AC14+CNTRL      LOW (LINE ERROR)
0337 02753 005001      ABS AC10+CNTRL      HIGH (NORMAL COMPLETION)
0338*
0339*      STATE 22:  REOTR - READ EOT RESPONSE
0340*
0341 02754 011014      ST22  ABS EV18+12      -----
0342 02755 011010      ABS AC18+RREAD      ENQ RECVD
0343 02756 026401      ABS AC45+CNTRL      NAK RECVD
0344 02757 007401      ABS AC15+CNTRL      EOT RECVD
0345 02760 010027      ABS AC16+HNGUP      DLE EOT RECVD
0346 02761 026401      ABS AC45+CNTRL      TTD RECVD
0347 02762 026401      ABS AC45+CNTRL      TEXT RECVD
0348 02763 027426      ABS AC47+REOTR      DATA ERROR RECVD
0349 02764 027426      ABS AC47+REOTR      DATA OVERRUN
0350 02765 027426      ABS AC47+REOTR      GARBAGE RECVD
0351 02766 026401      ABS AC45+CNTRL      BAD ID
0352 02767 005001      ABS AC10+CNTRL      SHORT TIMEOUT
0353 02770 010401      ABS AC17+CNTRL      LONG TIMEOUT
0354 02771 007001      ABS AC14+CNTRL      LOW (LINE ERROR)
0355*
0356*      STATE 23:  HNGUP - HANG UP -- DLE EOT RECVD
0357*
0358 02772 020015      ST23  ABS EV00+13      -----
0359 02773 010027      ABS AC16+HNGUP      REQUEST: LINE OPEN
0360 02774 001000      ABS AC02+UNOPN      REQUEST: LINE CLOSE
0361 02775 010027      ABS AC16+HNGUP      REQUEST: READ ENQ
0362 02776 010027      ABS AC16+HNGUP      REQUEST: READ INIT
0363 02777 010027      ABS AC16+HNGUP      REQUEST: READ CONT
0364 03000 010027      ABS AC16+HNGUP      REQUEST: READ REPEAT
0365 03001 010027      ABS AC16+HNGUP      REQUEST: READ WITH RVI
0366 03002 010027      ABS AC16+HNGUP      REQUEST: DELAY READ
0367 03003 010027      ABS AC16+HNGUP      REQUEST: WRITE ENQ
0368 03004 010027      ABS AC16+HNGUP      REQUEST: WRITE CONTINUE
0369 03005 010027      ABS AC16+HNGUP      REQUEST: WRITE CONV
0370 03006 010027      ABS AC16+HNGUP      REQUEST: WRITE EOT
0371 03007 010027      ABS AC16+HNGUP      REQUEST: WRITE DISCONNECT
0372 03010 010027      ABS AC16+HNGUP      REQUEST: DELAY WRITE
0373*
0374*      STATE 24:  WTTD  - WRITE TTD
0375*
0376 03011 007020      ST24  ABS EV14+16      -----
0377 03012 015001      ABS AC26+CNTRL      ACK0 RECVD
0378 03013 015001      ABS AC26+CNTRL      ACK1 RECVD
0379 03014 015001      ABS AC26+CNTRL      WACK RECVD
0380 03015 015001      ABS AC26+CNTRL      RVI RECVD
0381 03016 015001      ABS AC26+CNTRL      ENQ RECVD
0382 03017 005014      ABS AC10+WRITE      NAK RECVD
0383 03020 007401      ABS AC15+CNTRL      EOT RECVD
0384 03021 010001      ABS AC16+CNTRL      DLE EOT RECVD
0385 03022 015001      ABS AC26+CNTRL      TTD RECVD
0386 03023 015001      ABS AC26+CNTRL      TEXT RECVD

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0387	03024	015001	ABS	AC26+CNTRL	BAD TEXT RECVD
0388	03025	015001	ABS	AC26+CNTRL	TEXT OVERRUN
0389	03026	005014	ABS	AC10+WRITE	GARBAGE RECVD
0390	03027	026401	ABS	AC45+CNTRL	BAD ID (NOT EXPECTED)
0391	03030	015430	ABS	AC27+WTTD	SHORT TIMEOUT
0392	03031	010401	ABS	AC17+CNTRL	LONG TIMEOUT (NOT EXECTED)
0393	03032	007001	ABS	AC14+CNTRL	LOW (LINE ERROR)
0394*					
0395	03033	000000	ST25	NOP	LOGICAL END TO STATE=TRANS

0397* CONSTANTS & STORAGE SHARED BY MESSAGE PROC & CHARACTER PROC

```

0398*
0399 00053      .0      EQU 53B      DEC 0
0400 00054      .1      EQU 54B      DEC 1
0401 00055      .2      EQU 55B      DEC 2
0402 00056      .3      EQU 56B      DEC 3
0403 00057      .4      EQU 57B      DEC 4
0404 00060      .5      EQU 60B      DEC 5
0405 00061      .6      EQU 61B      DEC 6
0406 00062      .7      EQU 62B      DEC 7
0407 00063      .8      EQU 63B      DEC 8
0408 00064      .9      EQU 64B      DEC 9
0409 00065      .10     EQU 65B      DEC 10
0410 03034 000013 .11     DEC 11
0411 03035 000014 .12     DEC 12      DEC 12,  OCT 14
0412 03036 000015 .13     DEC 13      DEC 13,  OCT 15
0413 03037 000016 .14     DEC 14      DEC 14,  OCT 12
0414 00070      .15     EQU 70B      DEC 15,  OCT 17
0415 00066      .17     EQU 66B      OCT 21,  DEC 17
0416 00000      A       EQU 0
0417 00001      B       EQU 1
0418 00070      B17     EQU 70B      OCT 17,  DEC 18
0419 00072      B77     EQU 72B      OCT 77,  DEC 63
0420 00067      B100    EQU 67B      OCT 100, DEC 64
0421 00073      B177    EQU 73B      OCT 177, DEC 127
0422 00074      B377    EQU 74B      OCT 377, DEC 255
0423 03040 004000   B4000 OCT 004000 OCT 4000,      BIT 11, LEFT 8
0424 03040      H0800   EQU 84000   BIT 11
0425 03041 010000   H1000 OCT 010000 BIT 12
0426 03042 020000   H2000 OCT 020000 BIT 13
0427 03043 040000   H4000 OCT 040000 BIT 14
0428 03044 100000   H8000 OCT 100000 BIT 15
0429 00052      M1      EQU 52B      DEC -1,  OCT 177777
0430 00051      M2      EQU 51B      DEC -2,  OCT 177776
0431 00050      M3      EQU 50B      DEC -3,  OCT 177775
0432 00047      M4      EQU 47B      DEC -4,  OCT 177774
0433 00046      M5      EQU 46B      DEC -5,  OCT 177773
0434 00044      M7      EQU 44B      DEC -7,  OCT 177771
0435 00043      M8      EQU 43B      DEC -8,  OCT 177770
0436 00041      M10     EQU 41B      DEC -10, OCT 177766
0437 03045 177742   M30     DEC -30   DEC -30, OCT 177742
0438 03046 177742   NOM3    DEC -30   TICKS IN NOMINAL 3-SEC TIMEOUT
0439 03047 000000   PRET    OCT 0      P+2 RETURN ADDRESS FOR PHYSICAL
0440 03050 000000   PRETF   OCT 0      P+1 RETURN ADDRESS FOR PHYSICAL
0441*
0442*                    EQT POINTERS
0443 00300      EQTAD    EQU 300B      EQT ADDRESS (SET BY PHYSICAL)
0444 00213      EQT09    EQU 213B      PTR TO CONTROL WORD IN EQT
0445 00214      EQT10    EQU 214B      EQT 10: VALUE OF CONTROL PARAM 1
0446*                    OR REQUEST BUFFER ADDR
0447 00215      EQT11    EQU 215B      EQT 11: ADDR OF CONTROL PARAM 2
0448*                    OR REQUEST BUFFER LENGTH
0449 03051 000000   ET10    OCT 0      PTR TO EQT 10

```

0451*

EQT EXTENSION POINTERS

0452*

0453	03052	000000	CMASK	OCT 0	PTR TO CHAR MASK: 7 OR 8 BITS
0454	03053	000000	CTLEN	OCT 0	PTR TO CHAR TRACE LENGTH
0455	03054	000000	CTLWA	OCT 0	LAST WORD ADDR OF CHAR TRACE
0456	03055	000000	CTNXT	OCT 0	PTR TO NEXT CHAR TRACE WORD ADDR
0457	03056	000000	ERET	OCT 0	PTR TO RETURN ADDR FOR EDITOR
0458	03057	000000	KEY	OCT 0	PTR TO ADDR EXECUTED AFTER ENTRY
0459*					FROM PHYSICAL
0460	03060	000000	MAXCC	OCT 0	PTR TO MAX CONTROL CHAR
0461	03061	000000	MPFLS	OCT 0	PTR TO MESSAGE PROCESSOR FLAGS
0462	03062	000000	NTRY	OCT 0	PTR TO # OF RETRIES
0463	03063	000000	RTCTR	OCT 0	PTR TO RETRY CTR
0464	03064	000000	TCTA	OCT 0	PTR TO ADDR OF TRANS. CODE TABLE
0465	03065	000000	TLOG	OCT 0	PTR TO TRANSMISSION LOG
0466	03066	000000	ENVIR	OCT 0	PTR TO SPECIFIED ENVIRONMENT

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0468*      SUBROUTINE BSCR:  BSC RECEIVE
0469*          (A) = BUFFER ADDRESS
0470*          (B) = -(1 + BUFFER LENGTH IN BYTES)
0471*          (E) = INDICATOR: 1 =SAVE ID SEQ, 0 =DONT SAVE ID
0472*          (P) = JSB BSCR
0473*          (A) = COMPLETION STATUS
0474*
0475 03067 000000 BSCR NOP          RCVR ENTRY
0476 03070 001200      RAL          CHANGE TO BYTE ADDR
0477 03071 173767R      STA EBUFA,I  SAVE BYTE ADDR
0478 03072 177770R      STB EBUFL,I   & BUFFER LENGTH
0479 03073 002400      CLA
0480 03074 001622      ELA,RAL        PUT E INTO BIT 1
0481 03075 173772R      STA ESTAT,I   & INIT EDITOR STATUS
0482 03076 003400      CCA
0483 03077 173771R      STA ENXT,I    SET CPR STATE =-1: RECVD LEAD SYN
0484 03100 063067R      LDA BSCR
0485 03101 173056R      STA ERET,I    SAVE RETURN ADDR
0486 03102 063112R      LDA ,CHRR    SET "CHARR" AS
0487 03103 173057R      STA KEY,I     RETURN ENTRY ADDRESS
0488 03104 067046R      LDB NOM3     SPECIFY NOMINAL 3-SEC TIMEOUT
0489 03105 063045R      LDA M30
0490 03106 073046R      STA NOM3     SET NOM 3-SEC TIMEOUT TO 3 SEC
0491 03107 063044R      LDA H0000    SET BIT 15 (START READ) IN COMND
0492 03110 127047R      JMP PRET,I   RETURN TO PHYSICAL DRIVER
0493*
0494 03111 177760 M16 DEC -16      DEC -16, OCT 177760
0495 03112 003121R ,CHRR DEF CHARR ADDR OF ENTRY AFTER CHAR RECVD

0497 03113 060057 RXITB LDA ,4    SET CPR STATE =4: READ INT BCC
0498 03114 173771R SETIS STA ENXT,I  SAVE NEW CPR STATE
0499 03115 017631R XITS JSB BYTST    STORE RCVD BYTE
0500 03116 006400 XITRD CLB          NO TIMING INFORMATION
0501 03117 002400      CLA          CONTINUE READING
0502 03120 127047R      JMP PRET,I   RETURN TO PHYSICAL

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0504*          ENTRY FROM PHYSICAL AFTER CHAR RECEIVED
0505*
0506 03121 167053R CHARR LDB CTLEN,I
0507 03122 006003      SZB,RSS      CHAR TRACE LENGTH =0?
0508 03123 027132R      JMP CHCHK      YES, BYPASS STORE
0509 03124 167055R      LDB CTNXT,I
0510 03125 170001      STA B,I      STORE CHAR
0511 03126 057054R      CPB CTLWA      IS THIS LAST WORD?
0512 03127 067311R      LDB TRLWA      YES, SET ADDR =FWA -1
0513 03130 006004      INB
0514 03131 177055R      STB CTNXT,I
0515 03132 064070 CHCHK LDB ,15      INIT RETURN STATUS =15
0516 03133 001222      RAL,RAL
0517 03134 002020      SSA      BIT 13 SET (DATA ERROR)?
0518 03135 027156R      JMP CHRDE      YES
0519 03136 001310      RAR,SLA      BIT 15 SET (TIMEOUT)?
0001 03137 027173R      JMP CHARE      YES
0002 03140 002020      SSA      BIT 14 SET (LINE ERROR)?
0003 03141 027172R      JMP CHARE-1      YES
0004 03142 001300 CHARP RAR      GET CHAR BACK IN PLACE
0005 03143 113052R      AND CMASK,I      & ISOLATE IT
0006 03144 073761R      STA EBYTE      & SAVE EXPANDED BYTE
0007 03145 167066R      LDB ENVIR,I
0008 03146 005200      RBL
0009 03147 006020      SSB
0010 03150 010073      AND B177      TRANS CODE = ASCII?
0011 03151 073760R      STA BYTE      YES, STRIP OFF 8TH BIT
0012 03152 167771R      LDB ENXT,I      GET NEXT EDITOR STATE
0013 03153 047255R      ADB INPRT      & ADD CP RECV STATE BASE
0014 03154 164001      LDB B,I      B = STATE ADDR
0015 03155 124001      JMP B,I      GO TO DESIRED STATE
0016*
0017 03156 070001 CHRDE STA B      HERE IF DATA ERROR
0018 03157 163772R      LDA ESTAT,I
0019 03160 033040R      IOR H0800      INDICATE DATA ERROR BY SETTING
0020 03161 173772R      STA ESTAT,I      BIT 11 IN EDITOR STATUS
0021 03162 060070      LDA ,15
0022 03163 005310      RBR,SLB      BIT 15 SET (TIMEOUT)?
0023 03164 027174R      JMP RRET      YES, REPORT TIMEOUT
0024 03165 063034R      LDA ,11
0025 03166 006020      SSB
0026 03167 027174R      JMP RRET      BIT 14 SET (LINE ERROR)?
0027 03170 074000      STB A      YES, BUT REPORT DATA ERROR
0028 03171 027142R      JMP CHARP      PROCESS CHAR, HOPING
0029*          TO FIND END
0030 03172 044052      ADB M1      NOW STATUS = 14
0031 03173 060001 CHARE LDA B      GET ERROR STATUS IN A
0032 03174 073233R RRET STA RSTAT      SAVE STATUS
0033 03175 043235R      ADA RSTAB
0034 03176 164000      LDB A,I      GET RECV STATUS TABLE ENTRY
0035 03177 163061R      LDA MPFLS,I
0036 03200 004010      SLB      CLEAR TEXT-RECVD FLAG (BIT 7)?
0037 03201 013234R      AND HFF7F      YES
0038 03202 005310      RBR,SLB      SET TEXT-RECVD FLAG (BIT 7)?
0039 03203 033246R      IOR B200      YES
0040 03204 005310      RBR,SLB      SET CONTACT-MADE FLAG (BIT 0)?

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0041	03205	030054		IOR ,1	YES
0042	03206	173061R		STA MPFLS,I	
0043	03207	005310		RBR,SLB	INC ERROR-FREE MESSAGES?
0044	03210	002001		RSS	YES
0045	03211	027216R		JMP RET1	
0046	03212	060056		LDA ,3	
0047	03213	043305R		ADA LTC9	INC # OF ERROR-FREE MESSAGES
0048	03214	134000		ISZ A,I	(MAY OR MAY NOT BE APPROPRIATE)
0049	03215	000000		NOP	NULL IN CASE OF ROLLOVER
0050	03216	002400	RET1	CLA	
0051	03217	005310		RBR,SLB	INC # OF WACKS OR TTDS RECVD?
0052	03220	060065		LDA ,10	YES
0053	03221	005310		RBR,SLB	INC # OF NAKS RECVD?
0054	03222	060060		LDA ,5	YES
0055	03223	002003		SZA,RSS	ANYTHING TO INC?
0056	03224	027230R		JMP RET2	NO
0057	03225	043305R		ADA LTC9	GET ADDR OF LONG-TERM STAT
0058	03226	134000		ISZ A,I	& INC
0059	03227	000000		NOP	NULL IN CASE OF ROLLOVER
0060	03230	063233R	RET2	LDA RSTAT	
0061	03231	167056R	TRET	LDB ERET,I	GET RETURN ADDR
0062	03232	124001		JMP B,I	
0063*					
0064	03233	000000	RSTAT	OCT 0	RCV-ROUTINE COMPLETION STATUS
0065	03234	177677	HFF7F	OCT 177577	OCT -201, -129, REVERSE BIT 7

0067* RECV COMPLETION STATUS TABLE:

0068*

0069* BIT 0 *CLEAR TEXT-RECVD FLAG

0070*

0071* BIT 1 *SET TEXT-RECVD FLAG

0072* BIT 2 *SET CONTACT MADE FLAG

0073*

0074 03235 003235R RSTAB DEF *

0075 03236 000011 OCT 11

0076 03237 000011 OCT 11

0077 03240 000031 OCT 31

0078 03241 000011 OCT 11

0079 03242 000010 OCT 10

0080 03243 000051 OCT 51

0081 03244 000011 OCT 11

0082 03245 000011 OCT 11

0083 03246 000034 OCT 34

0084 03247 000012 OCT 12

0085 03250 000000 OCT 0

0086 03251 000006 OCT 6

0087 03252 000000 OCT 0

0088 03253 000000 OCT 0

0089 03254 000000 OCT 0

BIT 3 *INC # OF ERROR-FREE
MESSAGES RECVD

BIT 4 *INC # OF WACKS OR TTDS

BIT 5 *INC # OF NAKS RECVD

1 ACK0

2 ACK1

3 WACK

4 RVI

5 ENQ

6 NAK

7 EOT

8 DLE EOT

9 TTD

10 GOOD TEXT

11 BCC, PARITY, OR FORMAT ERROR

12 TEXT OVERRUN

13 GARBAGE

14 LINE ERROR

15 TIMEOUT

0091*

0092*

STATE TABLE FOR CP RECEIVE

0093	03255	003257R	INPRT	DEF	++2		
0094	03256	003271R		DEF	RLSYN	RECV LEADING SYNCs	-1
0095	03257	003306R		DEF	SRHDR	SEARCH FOR START OF HEADER	0
0096	03260	003354R		DEF	PAD	CHECK PAD AFTER CONTROL SEQ.	1
0097	03261	003365R		DEF	STICK	CHECK STX/STICK AFTER DLE	2
0098	03262	003415R		DEF	RD TXT	READ TEXT DATA	3
0099	03263	003466R		DEF	RIBCC	READ INTERMEDIATE BCC	4
0100	03264	003476R		DEF	DLSTX	CHECK STX AFTER DLE	5
0101	03265	003517R		DEF	RTTXT	READ TRANSPARENT TEXT DATA	6
0102	03266	003526R		DEF	DLECC	CHECK CONTROL CHAR AFTER DLE	7
0103	03267	003576R		DEF	RDBCC	READ BCC	8
0104	03270	003603R		DEF	SOHST	CHECK CHAR AFTER SOH	9

0106* CP RECV STATE -1: RECV LEADING SYNCs
0107*
0108 03271 006404 RLSYN CLB,INB OFFSET NEEDED TO
0109 03272 016470R JSB GCHAR GET SYNC
0110 03273 050001 CPA B CHAR =SYNC?
0111 03274 002001 RSS
0112 03275 027116R JMP XITRD NO
0113 03276 064043 LDB M8 START WITH INIT CHAR COUNT = 7
0114 03277 163061R LDA MPFLS,I
0115 03300 002011 SLA,RSS CONTACT MADE YET (BIT 0 =1)?
0116 03301 067111R LDB M16 NO, SET INIT CHAR COUNT = 15
0117 03302 177774R STB ICCTR,I
0118 03303 006400 CLB SET CPR STATE =0: LOOK FOR STRT
0119 03304 177771R STB ENXT,I
0120 03305 027454R JMP RXSYN

0122* CP RECV STATE 0: SEARCH FOR START OF TEXT
0123*
0124 03306 067310R SRHDR LDB SRPRT GET PROCESSOR TABLE ADDRESS
0125 03307 027527R JMP RDCOD AND GO DECODE RCVD BYTE

0127* TABLE FOR CP RECEIVE STATE 0
0128*
0129 03310 003311R SRPRT DEF **1
0130 03311 003324R DEF INCHR NON-CONTROL CHAR PROCESSOR
0131 03312 003334R DEF CMES ENQ PROCESSOR
0132 03313 003334R DEF CMES NAK PROCESSOR
0133 03314 003334R DEF CMES EOT PROCESSOR
0134 03315 003324R DEF INCHR ETX PROCESSOR
0135 03316 003324R DEF INCHR ETB PROCESSOR
0136 03317 003342R DEF SOHCR SOH PROCESSOR
0137 03320 003324R DEF INCHR ITB PROCESSOR
0138 03321 003344R DEF SOM STX PROCESSOR
0139 03322 003454R DEF RXSYN SYN PROCESSOR
0140 03323 003352R DEF RSTA2 DLE PROCESSOR
0141*
0142 03324 137774R INCHR ISZ ICCTR,I INIT CHAR CTR OVERFLOW?
0143 03325 027330R JMP GARB+2 NO
0144 03326 063036R GARB LDA ,13 YES, SET STATUS =13 (GARBAGE)
0145 03327 027174R JMP RRET & RETURN FROM BSCR
0146 03330 167772R LDB ESTAT,I GET EDITOR STATUS
0147 03331 005310 RBR,SLB BYTE =ID CHAR TO BE STORED?
0148 03332 027116R JMP XITS YES, GO STORE CHAR
0149 03333 027116R JMP XITRD NO
0150*
0151* CONTROL MESSAGE: ENQ, NAK, OR EOT
0152 03334 067757R CMES LDB BINDX
0153 03335 044057 ADB ,4 ADD TO CHAR INDEX GETTING 5,6,7
0154 03336 177267R STB ET14,I & TEMP SAVE
0155 03337 002404 CLA,INA SET CPR STATE =1: CHECK PAD
0156 03340 173771R NOSTR STA ENXT,I SAVE STATE & BYPASS BYTE STORE
0157 03341 027116R JMP XITRD
0158*

0159	03342	060064	SOHCR	LDA ,9	SET CPR STATE =9: AFTER SOH
0160	03343	027340R		JMP NOSTR	& BYPASS BYTE STORING
0161*					
0162	03344	006400	SOM	CLB	
0163	03345	060056		LDA ,3	SET CPR STATE =3: NONTRANS TEXT
0164	03346	177766R		STB BLKSP,1	INIT BLOCK SPEC BITS
0165	03347	006400		CLB	
0166	03350	177765R		STB BCC,I	ZERO THE BCC
0167	03351	027340R		JMP NOSTR	BYPASS BYTE STORING
0168*					
0169	03352	060055	RSTA2	LDA ,2	SET CPR STATE =2: AFTER INIT DLE
0170	03353	027340R		JMP NOSTR	& BYPASS BYTE STORING

```

0172*          CP RECV STATE 1:  CHECK FOR PAD
0173*
0174  03354 010070  PAD    AND B17
0175  03355 050070      CPA B17      BYTE *PAD CHAR?
0176  03356 002001      RSS
0177  03357 027326R     JMP GARB      NO, DECLARE GARBAGE & RETURN
0178  03360 163267R     LDA ET14,I    GET STATUS:5,6,7 FOR ENG,NAK,EOT
0179  03361 027174R     JMP RRET      & RETURN FROM BSCR
0180*
0181  03362 003400  DECR1 CCA          DECREMENT INDEX, GO
0182  03363 143771R     ADA ENXT,I    SET NEW STATE AND
0183  03364 027114R     JMP SETIS     STORE DATA BYTE

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0185*          CP RECV STATE 2:  CHECK CHAR AFTER INITIAL DLE
0186*
0187  03365 052166R  STICK CPA STX      CHAR *STX?
0188  03366 027410R      JMP TSTX      YES, GO TO TRANS TEXT STATE
0189  03367 064062      LDB ,7         OFFSET NEEDED TO
0190  03370 016470R      JSB GCHAR      GET EOT
0191  03371 050001      CPA B          CHAR *EOT?
0192  03372 027413R      JMP DLEOT     YES, REPORT DLE EOT
0193  03373 167064R      LDB TCTA,I    GET ADDR OF TRANSM CODE TABLE
0194  03374 044065      ADB ,10        & ADD OFFSET FOR STICK CHAR8
0195  03375 077555R      STB PTR
0196  03376 064047      LDB M4         GET TABLE LENGTH
0197  03377 153555R      CPA PTR,I     CHAR * TABLE ENTRY?
0198  03400 027405R      JMP *+5       YES
0199  03401 037555R      ISZ PTR       BUMP TO NEXT STICK CHAR
0200  03402 034001      ISZ B         END OF TABLE?
0201  03403 027377R      JMP *+4       NO
0202  03404 027326R      JMP GARB      YES, NOT A STICK CHAR
0203  03405 007004      CMB,INB       GET STATUS: 1, 2, 3, OR 4
0204  03406 074000      STB A         & RETURN IN A-REG
0205  03407 027174R      JMP RRET      RETURN FROM BSCR
0206*
0207  03410 060061  TSTX  LDA ,6       SET CPR STATE =6: TRANSP TEXT
0208  03411 064054      LDB ,1         & SET BLOCK SPEC BIT 0 (TRANS)
0209  03412 027346R      JMP 80M+2
0210*
0211  03413 060063  DLEOT LDA ,8       REPORT DLE EOT RECVD
0212  03414 027174R      JMP RRET      & RETURN FROM BSCR

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0214* CP RECV STATE 3: READ NONTRANSPARENT TEXT
 0215*
 0216 03415 067417R RDTXT LDB TXTCC GET PROCESSOR TABLE ADDRESS
 0217 03416 027527R JMP RDCOD

0219* TABLE FOR CP RECEIVE STATE 3
 0220*

0221	03417	003420R	TXTCC	DEF	++1	
0222	03420	003433R		DEF	RXOTH	NON-CONTROL CHAR PROCESSOR
0223	03421	003437R		DEF	RXENO	END PROCESSOR
0224	03422	003433R		DEF	RXOTH	NAK PROCESSOR
0225	03423	003433R		DEF	RXOTH	EOT PROCESSOR
0226	03424	003445R		DEF	RXETX	ETX PROCESSOR
0227	03425	003442R		DEF	RXETB	ETB PROCESSOR
0228	03426	003433R		DEF	RXOTH	SOH PROCESSOR
0229	03427	003113R		DEF	RXITB	ITB PROCESSOR
0230	03430	003451R		DEF	RXSTX	STX PROCESSOR
0231	03431	003454R		DEF	RXSYN	SYN PROCESSOR
0232	03432	003456R		DEF	RXDLE	DLE PROCESSOR

0234	03433	163766R	RXOTH	LDA	BLKSP,I	GET BLOCK SPEC
0235	03434	001710		ALF,SLA		BIT 12 SET (DOING HEADER)?
0236	03435	137773R		ISZ	HDCNT,I	YES, INC HEADER COUNT
0237	03436	027115R		JMP	XITS	GO STORE BYTE
0238*						
0239	03437	016432R	RXENO	JSB	EOHED	PROCESS POSSIBLE END-OF-HEADER
0240	03440	060064		LDA	,9	STATUS =9 (TTD OR ABORTED TEXT)
0241	03441	027174R		JMP	RRET	RETURN FROM BSCR
0242*						
0243	03442	060055	RXETB	LDA	,2	SET BIT 1 IN
0244	03443	133766R		IOR	BLKSP,I	BLOCK SPEC TO INDICATE ETB
0245	03444	173766R		STA	BLKSP,I	
0246	03445	016432R	RXETX	JSB	EOHED	PROCESS POSSIBLE END-OF-HEADER
0247	03446	017652R		JSB	CBCC	CALCULATE BCC
0248	03447	060063		LDA	,8	SET CPR STATE =8: READ BCC
0249	03450	027340R		JMP	NOSTR	& BYPASS BYTE STORING
0250*						
0251	03451	017652R	RXSTX	JSB	CBCC	CALCULATE BCC ON STX
0252	03452	016432R		JSB	EOHED	PROCESS POSSIBLE END-OF-HDR
0253	03453	027116R		JMP	XITRD	& BYPASS BYTE STORING
0254*						
0255	03454	067045R	RXSYN	LDB	M30	START NEW 3-SEC TIMER
0256	03455	027117R		JMP	XITRD+1	& BYPASS BYTE STORING
0257*						
0258	03456	167766R	RXDLE	LDB	BLKSP,I	
0259	03457	060060		LDA	,5	SET CPR STATE =5: CHAR AFTR DLE
0260	03460	005710		BLF,SLB		BIT 12 SET (DOING HEADER)?
0261	03461	002001		RSS		YES
0262	03462	027114R		JMP	SETIS	NO, STORE DLE
0263	03463	017652R		JSB	CBCC	CALC BCC ON DLE
0264	03464	060060		LDA	,5	SET CPR STATE =5: CHAR AFTR DLE
0265	03465	027340R		JMP	NOSTR	& BYPASS BYTE STORING

0267*			CP RECV STATE 4:	READ INTERMEDIATE BCC	
0268*					
0269	03466	006400	RIHCC	CLB	SPECIFY RECYD BCC PROCESSOR
0270	03467	016447R		JSB GBCCA	& GET ADDR
0271	03470	114001		JSB B,I	CHECK RECYD BCC
0272	03471	027116R		JMP XITRD	READ 2ND BCC CHAR (ONLY IF CRC)
0273	03472	002400		CLA	
0274	03473	173765R		STA BCC,I	RESET THE BCC
0275	03474	060056		LDA ,3	SET CPR STATE #3: NONTRANS TEXT
0276	03475	027340R		JMP NOSTR	& BYPASS BYTE STORING

0278*			CP RECV STATE 5:	CHECK STX AFTER NONTRANS DLE	
0279*					
0280	03476	052166R	DLSTX	CPA STX	CHAR = STX?
0281	03477	027505R		JMP STRTX	YES, PROCESS STRANSPARENT TEXT
0282	03500	163772R		LDA ESTAT,I	NO, INDICATE FORMAT ERROR
0283	03501	033040R		IOR H0800	BY SETTING BIT 11
0284	03502	173772R		STA ESTAT,I	KEEP GOING
0285	03503	060056		LDA ,3	CPR STATE #3: NONTR TRXT
0286	03504	027114R		JMP SETIS	
0287*					
0288	03505	163766R	STRTX	LDA BLKSP,I	
0289	03506	030054		IOR ,1	SET BLOCK SPEC BIT 0 (TRANS)
0290	03507	173766R		STA BLKSP,I	
0291	03510	060061		LDA ,6	SET CPR STATE #6: TRANSP TEXT
0292	03511	167766R		LDB BLKSP,I	GET BLOCK SPEC
0293	03512	005710		BLF,SLB	BIT 12 SET (DOING HEADER)?
0294	03513	002001		RSS	YES
0295	03514	027114R		JMP SETIS	NO, STORE STX AS INDICATOR
0296	03515	173771R		STA ENXT,I	
0297	03516	027451R		JMP RXSTX	CALC BCC ON STX, END HEADER

0299* CP RECV STATE 6: READ TRANSPARENT TEXT
 0300*
 0301 03517 052164R RTTXT CPA DLE RECD CHAR =DLE?
 0302 03520 027524R JMP ++4 YES
 0303 03521 063761R LDA EBYTE
 0304 03522 073760R STA BYTE GO STORE
 0305 03523 027115R JMP XITS ALL 8 BITS
 0306 03524 060062 LDA ,7 SET CPR STATE #7: AFTR TRANS DLE
 0307 03525 027340R JMP NOSTR & BYPASS STORING

0309* CP RECV STATE 7: CHECK CHAR AFTER TRANSP DLE
 0310*
 0311 03526 067556R DLECC LDB RTCC GET TRANSPRNT PRCSR TBL ADDR
 0312 03527 077554R RDCOD STB PRTA SAVE PRCSR TABLE ADDRESS
 0313 03530 006400 CLB
 0314 03531 063760R LDA BYTE
 0315 03532 003004 CMA,INA IF ITS NOT A CONTROL
 0316 03533 143060R ADA MAXCC,I CHARACTER, DON'T SCAN TABLE
 0317 03534 002020 SSA
 0318 03535 027551R JMP NOTCC
 0319 03536 063760R LDA BYTE
 0320 03537 167064R LDB TCTA,I PUT CONTROL CHAR TABLE
 0321 03540 077555R STB PTR ADDRESS IN WORK WORD
 0322 03541 064041 LDB M10 GET TABLE LENGTH
 0323 03542 153555R CPA PTR,I EQUAL TO TABLE ENTRY
 0324 03543 027547R JMP ++4 YES
 0325 03544 037555R ISZ PTR BUMP TO NEXT CNTRL CHAR
 0326 03545 034001 ISZ B END OF TABLE
 0327 03546 027542R JMP --4 NO
 0328 03547 007004 CMB,INB COMPUTE PROCESSING ROUTINE
 0329 03550 077757R STB BINDX SAVE CHAR INDEX NO.
 0330 03551 047554R NOTCC ADB PRTA ADDRESS AND JUMP TO IT
 0331 03552 164001 LDB B,I
 0332 03553 124001 JMP B,I
 0333 03554 000000 PRTA NOP
 0334 03555 000000 PTR NOP

0336* TABLE FOR CP RECEIVE STATE 7
 0337*
 0338 03556 003557R RTCC DEF ++1
 0339 03557 003326R DEF GARB ILLEGAL DLE SEQUENCE
 0340 03560 003440R DEF RXENQ+1 ENQ PROCESSOR
 0341 03561 003326R DEF GARB NAK PROCESSOR
 0342 03562 003326R DEF GARB EOT PROCESSOR
 0343 03563 003445R DEF RXETX ETX PROCESSOR
 0344 03564 003442R DEF RXETB ETB PROCESSOR
 0345 03565 003326R DEF GARB SOH PROCESSOR
 0346 03566 003113R DEF RXITB ITB PROCESSOR
 0347 03567 003326R DEF GARB STX PROCESSOR
 0348 03570 003572R DEF TTSYN SYN PROCESSOR
 0349 03571 003362R DEF DECR1 DLE PROCESSOR

0351	03572	003400	TTSYN	CCA	HERE IF TRANSP SYNC RECVD
0352	03573	143771R		ADA ENXT,I	DECREMENT STATE BY 1
0353	03574	173771R		STA ENXT,I	
0354	03575	027454R		JMP RXSYN	START 3-SEC TIMER & BYPASS STORE

0356*			CP	RECV STATE 8:	READ BCC
0357*					
0358	03576	006400	RDBCC	CLB	SPECIFY RECVD BCC PROCESSOR
0359	03577	016447R		JSB GBCCA	& GET ADDR
0360	03600	114001		JSB B,I	CHECK RECVD BCC
0361	03601	027116R		JMP XITRD	READ 2ND BCC CHAR (ONLY IF CRC)
0362	03602	027174R		JMP RRET	& RETURN FROM BSCR

```

0364*      CP RECV STATE 9: CHECK CHAR AFTER SOH
0365*
0366 03603 064064 SOHST LDB ,9      OFFSET NEEDED TO
0367 03604 016470R JSB GCHAR      GET ENQ
0368 03605 050001 CPA B          CHAR =ENQ?
0369 03606 027623R JMP SOENQ      YES
0370 03607 137767R ISZ EBUFA,I    BECAUSE THIS STARTS A HEADER,
0371 03610 137767R ISZ EBUFA,I    INC BUFFER ADDR BY 2 BYTES
0372 03611 137065R ISZ TLOG,I    & INC TRANS LOG BY 2 BYTES
0373 03612 137065R ISZ TLOG,I
0374 03613 002400 CLA
0375 03614 173765R STA BCC,I      ZERO THE BCC
0376 03615 002004 INA
0377 03616 173773R STA HDCNT,I    ZERO HEADER COUNT
0378 03617 067756R LDB H9000      PREPARE TO SET BITS 15 & 12
0379 03620 177766R STB BLKSP,I    INIT BLOCK SPEC BITS
0380 03621 060056 LDA ,3          SET CPR STATE =3: NONTRANS TEXT
0381 03622 027114R JMP SETIS      & STORE BYTE
0382 03623 167066R SOENQ LDB ENVIR,I
0383 03624 005710 BLF,SLB
0384 03625 002001 RSS
0385 03626 027326R JMP GARB
0386 03627 060060 LDA ,5
0387 03630 027174R JMP RRET      HASP WORKSTATION?
                                YES, NO NEED TO CHECK FOR PAD
                                NO, GARBAGE
                                REPORT ENQ RECVD
                                & RETURN FROM BSCR

```

```

0389*      SUBROUTINE BYTST: STORE BYTE
0390*
0391 03631 000000 BYTST NOP
0392 03632 137770R ISZ EBUFL,I    HAS LAST BYTE BEEN FILLED?
0393 03633 027636R JMP ++3      NO
0394 03634 063035R LDA ,12     YES, REPORT OVERRUN
0395 03635 027174R JMP RRET      & RETURN FROM BSCR
0396 03636 167767R LDB EBUFA,I    GET BYTE ADDR
0397 03637 004065 CLE,ERB      E = LEFT/RT BYTE IND
0398 03640 063760R LDA BYTE
0399 03641 002041 SEZ,RSS      CHAR ON LEFT (E =0)?
0400 03642 001727 ALF,ALF      YES, MOVE TO LEFT
0401 03643 002040 SEZ
0402 03644 130001 IOR B,I      CHAR ON LEFT (E =0)?
0403 03645 170001 STA B,I      NO, MERGE IN LEFT BYTE
0404 03646 137767R ISZ EBUFA,I    & STORE IT
0405 03647 137065R ISZ TLOG,I    INC BYTE ADDR
0406 03650 017652R JSB CBCC      INC TRANSMISSION LOG
0407 03651 127631R JMP BYTST,I    CALCULATE BCC

```


0409* SUBROUTINE CBCC: CALCULATE BCC

```

0410*
0411 03652 000000 CBCC NOP
0412 03653 064055 LDB ,2 SPECIFY BCC GENERATOR
0413 03654 016447R JSB GBCCA & GET ADDR
0414 03655 163765R LDA BCC,I GET CURRENT BCC
0415 03656 114001 JSB B,I GENERATE NEW BCC
0416 03657 173765R STA BCC,I STORE NEW BCC
0417 03660 127652R JMP CBCC,I

```

0419* SUBROUTINE CRCG: CRC GENERATOR

```

0420* (A) = CURRENT CRC
0421* (P) = JSB CRCG
0422* (A) = NEW CRC
0423 03661 120001 CRCD OCT 120001 CRC POLYNOMIAL
0424*
0425 03662 000000 CRCG NOP
0426 03663 023761R XOR EBYTE XOR IN NEW BYTE (ALL 8 BITS)
0427 03664 000075 CLE,SLA,ERA NOW PROCESS THE CRC POLYNOMIAL
0428 03665 023661R XOR CRCD
0429 03666 000075 CLE,SLA,ERA
0430 03667 023661R XOR CRCD
0431 03670 000075 CLE,SLA,ERA
0432 03671 023661R XOR CRCD
0433 03672 000075 CLE,SLA,ERA
0434 03673 023661R XOR CRCD
0435 03674 000075 CLE,SLA,ERA
0436 03675 023661R XOR CRCD
0437 03676 000075 CLE,SLA,ERA
0438 03677 023661R XOR CRCD
0439 03700 000075 CLE,SLA,ERA
0440 03701 023661R XOR CRCD
0441 03702 000075 CLE,SLA,ERA
0442 03703 023661R XOR CRCD
0443 03704 127662R JMP CRCG,I

```

0445* SUBROUTINE CRCK: CHECK CRC

0446*

0447	03705	000000	CRCK	NOP	
0448	03706	163772R		LDA ESTAT,I	GET EDITOR STATUS
0449	03707	070001		STA B	
0450	03710	005710		BLF,SLB	PROCESS 2ND WORD (BIT 12 =1)?
0451	03711	027720R		JMP CRCK2	YES
0452	03712	033041R		IOR H1000	NO, SET THAT BIT FOR NEXT TIME
0453	03713	173772R		STA ESTAT,I	
0454	03714	063761R		LDA EBYTE	GET FIRST CRC BYTE
0455	03715	123765R		XOR BCC,I	XOR TO COMPUTED CRC
0456	03716	173765R		STA BCC,I	& SAVE RESULTS
0457	03717	127705R		JMP CRCK,I	
0458	03720	013253R	CRCK2	AND HEFFF	CLEAR BIT 12
0459	03721	173772R		STA ESTAT,I	
0460	03722	063705R		LDA CRCK	
0461	03723	073732R		STA LRCK	SET RETURN FOR CRCK INTO LRCK
0462	03724	027733R		JMP LRCK+1	

0464* SUBROUTINE LRCG: LRC GENERATOR

0465* (A) = CURRENT LRC (IN BITS 15 - 8)

0466* (P) = JSB LRCG

0467* (A) = NEW LRC

0468*

0469	03725	000000	LRCG	NOP	
0470	03726	067760R		LDB BYTE	
0471	03727	005727		BLF,BLF	
0472	03730	020001		XOR B	COMPUTE LRC
0473	03731	127725R		JMP LRCG,I	

0475* SUBROUTINE LRCK: CHECK LRC

0476*

0477	03732	000000	LRCK	NOP	
0478	03733	037732R		ISZ LRCK	BUMP TO FINISHED RETURN
0479	03734	063761R		LDA EBYTE	GET LAST CRC/LRC BYTE
0480	03735	001727		ALF,ALF	SWITCH TO HI 8 BITS
0481	03736	123765R		XOR BCC,I	XOR TO COMPUTED BCC
0482	03737	173765R		STA BCC,I	& SAVE RESULTS
0483	03740	002002		SZA	BCC OK (MATCH IF 0)?
0484	03741	027750R		JMP BABCC	NO
0485	03742	167772R		LDB ESTAT,I	YES BUT IF ITB'S,
0486	03743	005700		BLF	MUST CHECK IF
0487	03744	006020		SSB	PREV BAD BCC (ESTAT BIT 11 SET)
0488	03745	027753R		JMP BABCC+3	
0489	03746	060065		LDA .10	SET STATUS = GOOD TEXT
0490	03747	127732R		JMP LRCK,I	
0491	03750	163772R	BABCC	LDA ESTAT,I	INDICATE BAD BCC BY
0492	03751	033040R		IOR H0000	SETTING BIT 11
0493	03752	173772R		STA ESTAT,I	
0494	03753	063034R		LDA .11	REPORT BAD BCC
0495	03754	127732R		JMP LRCK,I	

0497* CONSTANTS & STORAGE FOR CHARACTER PROCESSOR (EDITOR) ONLY

0498*

0499	03755	000400	B400	OCT 400	OCT 400, DEC 256 BIT 8
0500	03756	110000	H9000	OCT 110000	OCT 110000, BITS 15 & 12

0502	03757	000000	BINDX	OCT 0	BYTE INDEX
0503	03760	000000	BYTE	OCT 0	BYTE SENT OR RECVD, CHAR FORM
0504	03761	000000	EBYTE	OCT 0	BYTE SENT OR RECVD, EXPANDED FOR
0505	03762	000000	PBCC	OCT 0	PREV BCC
0506	03763	000000	PHCOM	OCT 0	PHYSICAL DRIVER COMMAND WORD
0507	03764	000000	PHTIM	OCT 0	PHYSICAL DRIVER TIMING WORD

0508*

0509* EQT EXTENSION POINTERS

0510*

0511	03765	000000	BCC	OCT 0	PTR TO BCC BEGIN GENERATED
0512	03766	000000	BLKSP	OCT 0	PTR TO BLOCK SPEC BITS (15 - 13)
0513	03767	000000	EBUFA	OCT 0	PTR TO EDITOR BUFFER ADDR
0514	03770	000000	EBUFL	OCT 0	PTR TO EDITOR BUFFER LENGTH
0515	03771	000000	ENXT	OCT 0	PTR TO NEXT EDITOR STATE INDEX
0516	03772	000000	ESTAT	OCT 0	PTR TO EDITOR STATUS
0517	03773	000000	HDCNT	OCT 0	RECV: PTR TO HEADER CNT
0518	03774	000000	ICCTR	OCT 0	PTR TO INIT CHAR CTR:
0519*					FOR SEND, # OF SYNCs & FOR
0520*					RECV, # OF INIT CHAR ALLOWD
0521	03775	000000	SYCNT	OCT 0	PTR TO LEADING SYNC CTR

```

0523*      SUBROUTINE BSCT:  BSC TRANSMIT
0524*          (A)      = BUFFER ADDRESS
0525*          (B)      = -(1 + BUFFER LENGTH)
0526*          (P)      = JSR BSCT
0527*          (P+1)    = SPECIFICATION WORD
0528*                      BIT 1:  1 = TEXT-ENDING SEQ,  0 = NOT
0529*                      BIT 15: 1 = INC TRANS LOG,  0 = DONT
0530*          (A)      = COMPLETION STATUS
0531*
0532 03776 000000 BSCT NOP          XMIT ENTRY
0533 03777 001200 RAL          CHANGE TO BYTE ADDR
0534 04000 173767R STA EBUFA,I  SAVE BYTE ADDR
0535 04001 177770R STB EBUFL,I  & BUFFER LENGTH
0536 04002 163776R LDA BSCT,I
0537 04003 173772R STA ESTAT,I  GET SPECS FOR ENDING & INC
0538 04004 063776R LDA BSCT
0539 04005 002004 INA          GET P+2 ADDR
0540 04006 173056R STA ERET,I  SAVE RETURN ADDR
0541 04007 163061R LDA MPFLS,I
0542 04010 012033R AND HFEFF  CLEAR ENQ-SENT BIT, 8
0543 04011 173061R STA MPFLS,I
0544 04012 001310 RAR,SLA  INITIALIZATION CALL (BIT 1 = 0)?
0545 04013 026051R JMP SCON  NO
0546 04014 060041 LDA M10  PREPARE TO START 1 SEC TIMEOUT
0547 04015 073764R STA PHTIM  BY SETTING UP TIMING WORD
0548 04016 063043R LDA H4000  SET BIT 14 (START SEND) IN
0549 04017 073763R STA PHCOM  PHYSICAL COMMAND WORD
0550 04020 060046 LDA M5
0551 04021 173775R STA SYCNT,I  SET UP LEADING SYNC CTR
0552 04022 062032R LDA .CHRS
0553 04023 173057R STA KEY,I  SET UP ENTRY ADDR
0554 04024 003400 CCA
0555 04025 173771R STA ENXT,I  SET CPS STATE =-1 (SEND LD SYNC)
0556*
0557*      CP SEND STATE -1: SEND LEADING SYNC'S
0558*
0559 04026 002400 LDSYN CLA      SET NOT TO BUMP XMIT STATE INDEX
0560 04027 137775R ISZ SYCNT,I  INCREMENT SYNC CTR
0561 04030 026114R JMP XMTSY+1  -COUNTER DIDN'T ROLL - MORE SYN
0562 04031 026112R JMP XNTSY  -COUNTER ROLLED - BUMP STATE
0563 04032 004044R .CHRS DEF CHARS  ADDR OF ENTRY AFTER CHAR SENT
0564 04033 177377 HFEFF OCT 177377  OCT -401, -257, REVERSE BIT 8
0565*

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```

0567 04034 060055 TINC2 LDA ,2      INCREMENT STATE BY 2
0568 04035 143771R XITXS ADA ENXT,I  ADJUST STATE
0569 04036 173771R XITX1 STA ENXT,I
0570 04037 063761R XITX  LDA EBYTE    MERGE CHAR TO BE SENT
0571 04040 113052R      AND CMASK,I
0572 04041 033763R      IOR PHCOM     & PHYS COMMAND
0573 04042 067764R      LDB PHTIM    GET PHYS TIMING INFORMATION
0574 04043 127047R      JMP PRET,I   RETURN TO PHYSICAL

```

```

0575*
0001*      ENTRY FROM PHYSICAL AFTER CHAR SENT
0002*

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```

0003 04044 000066 CHARS CLE,ELA      E =TIMEOUT BIT
0004 04045 002020      SSA          LINE ERROR (A14 =1)?
0005 04046 026060R      JMP SLERR    YES
0006 04047 002040      SEZ          TIMEOUT (A15 =1)?
0007 04050 026062R      JMP CSTO     YES

```

```

0008*
0009*      CONTINUATION ENTRY TO BSCT

```

```

0010 04051 002400 SCON  CLA
0011 04052 073763R      STA PHCOM    CLEAR PHYSICAL COMMAND WORD
0012 04053 073764R      STA PHTIM    & TIMING WORD
0013 04054 163771R      LDA ENXT,I   GET NEXT EDITOR STATE INDEX
0014 04055 042070R      ADA OTPRT    & ADD CP SEND STATE BASE
0015 04056 160000      LDA A,I      A =STATE ADDR
0016 04057 124000      JMP A,I      GO TO DESIRED STATE

```

```

0017*
0018*      HERE IF LINE ERROR ON SEND
0019 04060 002404 SLERR CLA,INA      STATUS =1 (ERROR)
0020 04061 027231R      JMP TRET    RETURN FROM BSCT

```

```

0021*
0022*      HERE IF TIMEOUT ON SEND
0023 04062 163772R CSTO  LDA ESTAT,I
0024 04063 030054      IOR ,1      SET BIT N
0025 04064 173772R      STA ESTAT,I (EDITOR TIMEOUT FLAG)
0026 04065 063042R      LDA H2000    TELL PHYSICAL TO DO NOTHING
0027 04066 064041      LDB M10     START NEW 1-SEC TIMER
0028 04067 127047R      JMP PRET,I   RETURN TO PHYSICAL

```

```

0029*
0030*      STATE TABLE FOR CP SEND
0031*

```

```

0032 04070 004072R OTPRT DEF **2
0033 04071 004026R      DEF LDSYN    OUTPUT LEADING SYN'S      -1
0034 04072 004110R      DEF SRBGN    SRCH FOR RGN BCC ACCUM CHAR 0
0035 04073 004113R      DEF XMTSY    XMIT A SYNC CHARACTER      1
0036 04074 004152R      DEF STX?     CHECK STX AFTER DLE        2
0037 04075 004172R      DEF TXTXT    SEND NON-TRANSPARENT TEXT 3
0038 04076 004113R      DEF XMTSY    XMIT SYNC                  4
0039 04077 004152R      DEF STX?     CHECK STX AFTER DLE        5
0040 04100 004222R      DEF TRTXT    SEND TRANSPARENT TEXT      6
0041 04101 004113R      DEF XMTSY    XMIT SYNC                  7
0042 04102 004242R      DEF TXDLE    XMIT DLE FOLLOWING DLE      8
0043 04103 004313R      DEF TXBCC    SEND BCC AFTER ETB/ETX     9
0044 04104 004321R      DEF ITXBC    SEND BCC AFTER ITB        10
0045 04105 004332R      DEF SPAD     SEND PAD                   11
0046 04106 004342R      DEF ENDTX    LAST BYTE IS GONE         12
0047 04107 004344R      DEF SASOH    SEND CHAR AFTER SOH       13

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```

0049*          CP SEND STATE 0:  SEARCH FOR BEGINNING OF TEXT
0050*
0051 04110 016503R SRBGN JSB TYMSY      CHECK TIME TO SEND SYNC
0052 04111 026120R      JMP XMIT1      NOT TIME
0053 04112 002405  XNTSY CLA,INA,RSS    SET TO INCR STATE
0054*
0055*          CP SEND STATE 1:  XMIT A SYNC CHAR
0056*          CP SEND STATE 4:
0057*          CP SEND STATE 7:
0058*
0059 04113 003400  XMTSY CCA            SET TO DECR STATE
0060 04114 006404      CLB,INB          OFFSET NEEDED TO
0061 04115 016470R      JSB GCHAR      GET SYNC CHAR (RETURNED IN B)
0062 04116 077761R      STB EBYTE      GO SET STATE AND
0063 04117 026035R      JMP XITXS      SEND SYNC

0065 04120 016360R XMIT1 JSB BYTLD      GET A BYTE
0066 04121 026342R      JMP BUFGT      BUFFER EMPTY
0067 04122 066124R      LDB SRCCT      GET CONTROL CHAR PROCESSOR
0068 04123 027627R      JMP RDCOD      TABLE ADDRESS

0070*          TABLE FOR CP SEND STATE 0
0071*
0072 04124 004125R SRCCT DEF ++1
0073 04125 004037R      DEF XITX      DATA
0074 04126 004144R      DEF XENQ      ENQ
0075 04127 004317R      DEF XPAD      NAK
0076 04130 004317R      DEF XPAD      EOT
0077 04131 004037R      DEF XITX      ETX
0078 04132 004037R      DEF XITX      ETB
0079 04133 004150R      DEF XSOH      SOH
0080 04134 004037R      DEF XITX      ITB
0081 04135 004140R      DEF SETXT      STX
0082 04136 004037R      DEF XITX      SYN
0083 04137 004034R      DEF TINC2     DLE
0084*
0085 04140 060056  SETXT LDA ,3          SET CPS STATE =3 (NONTRANS TEXT)
0086 04141 006400      CLB
0087 04142 177765R      STB BCC,I      ZERO THE BCC
0088 04143 026036R      JMP XITX1
0089*
0090 04144 163061R XENQ  LDA MPFLS,I
0091 04145 033755R      IOR B400      SET ENQ-SENT BIT, 8
0092 04146 173061R      STA MPFLS,I
0093 04147 026317R      JMP XPAD      NOW SEND PAD
0094*
0095 04150 063036R XSOH  LDA ,13        SET CPS STATE =13: AFTER SOH,
0096 04151 026141R      JMP SETXT+1   ZERO BCC, & SEND SOH

```

```

0098*      CP SEND STATE 2:  CHECK STX AFTER DLE
0099*      CP SEND STATE 5:
0100*
0101  04152  016360R STX?  JSB BYTLD      GET A BYTE
0102  04153  026342R      JMP BUFGT      BUFFER EMPTY
0103  04154  066166R      LDB STX
0104  04155  057760R      CPB BYTE      IF STX GO SET TRANSPARENT
0105  04156  026161R      JMP SETPM      MODE
0106  04157  060051      LDA M2          SET TO DECR INDEX BY 2
0107  04160  026035R      JMP XITXS
0108*
0109  04161  167771R SETPM LDB ENXT,I
0110  04162  044051      ADB M2          IF NOT IN TEXT MODE CLEAR
0111  04163  006003      SZB,RSS        BCC ACCUMULATOR
0112  04164  177765R      STB BCC,I
0113  04165  163772R      LDA ESTAT,I
0114  04166  033246R      IOR B200      SET BIT 7 TO INDICATE TRANSP
0115  04167  173772R      STA ESTAT,I
0116  04170  060061      LDA ,6          SET CPS STATE =6 (TRANSP TEXT)
0117  04171  026036R      JMP XITX1      TEXT MODE

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0119*      CP SEND STATE 3:  SEND NON-TRANSPARENT TEXT
0120*
0121  04172  016503R TXTXT JSB TYMSY      CHECK TIME TO SEND SYNC
0122  04173  002001      RSS            NOT TIME
0123  04174  026112R      JMP XNTSY      GO SEND NON-TRANSPARENT SYNC
0124  04175  016360R      JSB BYTLD      GET A BYTE
0125  04176  026342R      JMP BUFGT      BUFFER EMPTY
0126  04177  066201R      LDB NTXCC      GET CONTROL CHAR PROCESSOR
0127  04200  027527R      JMP RDCOD      TABLE ADDR FOR THIS STATE
0128*
0129*      TABLE FOR CP SEND STATE 3
0130*
0131  04201  004202R NTXCC DEF ++1
0132  04202  004037R      DEF XITX      DATA PROCESSOR: SEND CHAR
0133  04203  004317R      DEF XPAD      ENQ PROCESSOR: SEND PAD
0134  04204  004037R      DEF XITX      NAK PROCESSOR: SEND CHAR
0135  04205  004037R      DEF XITX      EOT PROCESSOR: SEND CHAR
0136  04206  004311R      DEF ETX,B     ETX PROCESSOR: SEND HCC
0137  04207  004311R      DEF ETX,B     ETB PROCESSOR: SEND BCC
0138  04210  004037R      DEF XITX      SOH PROCESSOR: SEND CHAR
0139  04211  004215R      DEF ITBC      ITB PROCESSOR: SEND INT BCC
0140  04212  004037R      DEF XITX      STX PROCESSOR: SEND CHAR
0141  04213  004217R      DEF XSYN      SYN PROCESSOR: SEND CHAR
0142  04214  004034R      DEF TINC2     DLE P          CHECK FOR STX
0143*
0144  04215  060065      ITBC  LDA ,10     SET CPS STATE =10 (SEND INT BCC)
0145  04216  026036R      JMP XITX1
0146*
0147  04217  063762R XSYN  LDA PBCC      BACK UP THE BCC
0148  04220  173765R      STA BCC,I
0149  04221  026237R      JMP XITX      & SEND SYN

```

0151* CP SEND STATE 6: SEND TRANSPARENT TEXT
 0152*
 0153 04222 016503R TRTXT JSB TYMSY CHECK IF TIME TO SEND SYNC
 0154 04223 026230R JMP XMTT NOT TIME
 0155 04224 002404 CLA,INA SET TO INCR STATE
 0156 04225 066164R LDB DLE PREPARE TO SEND DLE
 0157 04226 077761R STB EBYTE
 0158 04227 026035R JMP XITXS

0160 04230 016360R XMTT JSB BYTLD GET A BYTE
 0161 04231 026342R JMP BUFMT BUFFER EMPTY
 0162 04232 066164R LDB DLE GET DLE
 0163 04233 057760R CPB BYTE TEXT CHAR =DLE?
 0164 04234 002001 RSS YES
 0165 04235 026037R JMP XITX
 0166 04236 060055 LDA ,2 SET CPS STATE =8: CHAR AFTER DLE
 0167 04237 067762R LDB PBCC
 0168 04240 177765R STB BCC,I BACK UP BCC
 0169 04241 026035R JMP XITXS

0171* CP SEND STATE 8: SEND TRANS CHAR AFTER DLE
 0172*
 0173 04242 016360R TXDLE JSB BYTLD GET A BYTE
 0174 04243 026342R JMP BUFMT BUFFER EMPTY
 0175 04244 163772R LDA ESTAT,I
 0176 04245 001310 RAR,SLA LEAVE TRANS (STATUS BIT 1 SET)?
 0177 04246 026272R JMP LVTRN YES
 0178 04247 003400 CCA
 0179 04250 143770R ADA EBUFL,I BACK UP BUFFER LENGTH
 0180 04251 173770R STA FBUFL,I
 0181 04252 003400 CCA
 0182 04253 143767R ADA EBUFA,I BACK UP BUFFER ADDR
 0183 04254 173767R STA EBUFA,I
 0184 04255 003400 CCA
 0185 04256 143065R ADA TLOG,I BACK UP TRANS LOG
 0186 04257 173065R STA TLOG,I
 0187 04260 066164R LDB DLE GET DLE
 0188 04261 077761R STB EBYTE PREPARE TO SEND DLE
 0189 04262 064055 LDB ,2 SPECIFY BCC GENERATOR
 0190 04263 016447R JSB GBCCA & GET ADDR
 0191 04264 063762R LDA PBCC
 0192 04265 173765R STA BCC,I BACK UP BCC
 0193 04266 114001 JSB B,I RUN DLE THRU GENERATOR
 0194 04267 173765R STA BCC,I
 0195 04270 060051 LDA M2 SET STATE BACK TO 6: TRANS
 0196 04271 026035R JMP XITXS
 0197*
 0198* HERE IF FLAG SAYS LEAVE TRANS STATE
 0199 04272 064060 LVTRN LDB ,5 OFFSET NEEDED TO
 0200 04273 147064R ADB TCTA,I GET ETB
 0201 04274 164001 LDB B,I B =CHAR
 0202 04275 010051 AND M2

0203	04276	001200	RAL	CLEAR FLAG IN BIT 1
0204	04277	173772R	STA ESTAT,I	
0205	04300	057760R	CPB BYTE	TEXT CHAR =ETB?
0206	04301	026311R	JMP ETXBT	YES, GET READY TO SEND BCC
0207	04302	064001	LDB ,6	OFFSET NEEDED TO
0208	04303	147064R	ADB TCTA,I	GET ETX
0209	04304	164001	LDB B,I	B =CHAR
0210	04305	057760R	CPB BYTE	TEXT CHAR =ETX?
0211	04306	026311R	JMP ETXBT	YES, GET READY TO SEND BCC
0212	04307	060055	LDA ,2	SET STATUS =IMPROBABLE EVENT
0213	04310	027231R	JMP TRET	& RETURN FROM BSCT
0214*				
0215	04311		ETXBT EQU *	
0216	04311	060064	ETX,B LDA ,9	SET CPS STATE =9 (SEND BCC)
0217	04312	026036R	JMP XITX1	

0219* CP SEND STATE 9: SEND BCC AFTER ETR/ETX

0220*

0221	04313	006404	TXBCC CLB,INB	SPECIFY SENT BCC PROCESSOR
0222	04314	016447R	JSB GBCCA	& GET ADDR
0223	04315	114001	JSB B,I	PROCESS BCC BYTE(S) TO BE SENT
0224	04316	026037R	JMP XITX	IF CRC, SEND 2ND BYTE
0225	04317	063034R	XPAD LDA ,11	SET CPS STATE =11 (SEND PAD)
0226	04320	026036R	JMP XITX1	SEND CURRENT BYTE

0228* CP SEND STATE 10: SEND BCC AFTER ITB

0229*

0230	04321	006404	ITXBC CLB,INB	SPECIFY SENT BCC PROCESSOR
0231	04322	016447R	JSB GBCCA	& GET ADDR
0232	04323	114001	JSB B,I	PROCESS BCC BYTE(S) TO BE SENT
0233	04324	026037R	JMP XITX	IF CRC, SEND 2ND BYTE
0234	04325	002400	CLA	
0235	04326	173765R	STA BCC,I	ZERO THE BCC
0236	04327	060057	LDA ,4	SET UP TO SEND TWO
0237	04330	173771R	STA ENXT,I	SYNCS AFTER BCC (CPS STATE 4)
0238	04331	026036R	JMP XITX1	THEN REVERT TO CPS STATE 3,TXTXT

0240* CP SEND STATE 11: SEND PAD

0241*

0242	04332	060074	SPAD LDA B377	
0243	04333	167066R	LDB ENVIR,I	
0244	04334	005200	RBL	
0245	04335	006020	SSB	TRANS CODE =ASCII?
0246	04336	060073	LDA B177	YES, PAD MUST BE ODD PARITY
0247	04337	073761R	STA EBYTE	
0248	04340	002404	CLA,INA	SET CPS STATE =12: LAST BYTE SNT
0249	04341	026035R	JMP XITXS	

```

0251*          CP SEND STATE 12:  ERROR/ LAST BYTE HAS BEEN SENT
0252*
0253  04342          BUFMT EQU *          HERE IF SEND BUFFER EMPTY
0254  04342 002400    ENDTX CLA          STATUS =0
0255  04343 027231R          JMP TRET          RETURN FROM BSCT

```

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0257*          CP SEND STATE 13:  SEND CHAR AFTER SOH
0258*
0259  04344 016360R SASOH JSB BYTLD          GET A BYTE
0260  04345 026342R          JMP BUFMT          BUFFER EMPTY
0261  04346 064064          LDB ,9          OFFSET NEEDED TO
0262  04347 016470R          JSB GCHAR          GET ENQ
0263  04350 057760R          CPB BYTE          CHAR =ENQ?
0264  04351 026354R          JMP ++3          YES
0265  04352 060056          LDA ,3          SET CPS STATE =3: NONTRANS TEXT
0266  04353 026036R          JMP XITX1
0267  04354 167066R          LDB ENVIR,I
0268  04355 005710          BLF,SLB          HASP WORKSTATION?
0269  04356 026144R          JMP XENQ          YES
0270  04357 026315R          JMP SLCER          NO, INVALID LOCAL TEXT

```

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0272* SUBROUTINE BYTLD: LOAD BYTE
0273* (P) = JSB BYTLD
0274* (P+1) = NO MORE BYTES IN BUFFER
0275* (P+2) = NORMAL RETURN
0276* (BYTE) = BYTE LOADED
0277* (BCC) = NEW BCC
0278*
0279 04360 000000 BYTLD NOP
0280 04361 137770R ISZ EBUFL,I HAS LAST BYTE BEEN SENT?
0281 04362 002001 RSS NO
0282 04363 126360R JMP BYTLD,I YES
0283 04364 167767R LDB EBUFA,I GET BYTE ADDR
0284 04365 004065 CLE,ERB E =LEFT/RT BYTE IND
0285 04366 160001 LDA B,I
0286 04367 002041 SEZ,RSS CHAR ON LEFT (E =0)?
0287 04370 001727 ALF,ALF YES
0288 04371 113052R AND CMASK,I
0289 04372 073761R STA EBYTE SAVE EXPANDED BYTE
0290 04373 167066R LDB ENVIR,I
0291 04374 005200 RBL
0292 04375 006020 SSB TRANS CODE = ASCII?
0293 04376 010073 AND B177 YES, STRIP OFF 8TH BIT
0294 04377 073760R STA BYTE
0295 04400 137767R ISZ EBUFA,I INC BYTE ADDR
0296 04401 036360R ISZ BYTLD GET P+2 RETURN
0297 04402 163765R LDA BCC,I
0298 04403 073762R STA PBCC SET UP PREV BCC
0299 04404 017652R JSB CBCC CALCULATE BCC
0300 04405 163772R LDA ESTAT,I
0301 04406 002020 SSA OK TO INCREMENT TLOG (BIT 15=1)?
0302 04407 137065R ISZ TLOG,I YES, INC TRANSMISSION LOG
0303 04410 126360R JMP BYTLD,I

```

```

0305* SUBROUTINE CRCS: CRC PROCESSOR (SEND)
0306* (P) = JSB CRCS
0307* (P+1) = 1ST CRC BYTE SENT
0308* (P+2) = 2ND CRC BYTE SENT
0309*
0310 04411 000000 CRCS NOP
0311 04412 163772R LDA ESTAT,I GET EDITOR STATUS
0312 04413 070001 STA B
0313 04414 005710 BLF,SLB PROCESS 2ND WORD (BIT 12 =1)?
0314 04415 026424R JMP CRCS2 YES
0315 04416 033041R IOR H1000 NO, SET THAT BIT FOR NEXT TIME
0316 04417 173772R STA ESTAT,I
0317 04420 163765R LDA BCC,I
0318 04421 010074 AND B377 ISOLATE 1ST CRC BYTE
0319 04422 073761R STA EBYTE PREPARE TO SEND CRC BYTE
0320 04423 126411R JMP CRCS,I
0321 04424 036411R CRCS2 ISZ CRCS GET P+2 RETURN
0322 04425 013253R AND HEFFF CLEAR BIT 12
0323 04426 173772R STA ESTAT,I
0324 04427 163765R LDA BCC,I
0325 04430 001727 ALF,ALF
0326 04431 026421R JMP CRCS2-J ISOLATE 2ND CRC BYTE

```

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0328*   SUBROUTINE EOHED:  PROCESS POSSIBLE END-OF-HEADER
0329*
0330  04432 000000 EOHED NOP
0331  04433 163766R   LDA BLKSP,I   GET BLOCK SPEC
0332  04434 001700   ALF
0333  04435 002011   SLA,RSS       DOING HEADER (BIT 12 SET)?
0334  04436 126432R   JMP EOHED,I   NO
0335  04437 163766R   LDA BLKSP,I
0336  04440 013253R   AND HEFFF     MASK OUT BIT 12
0337  04441 173766R   STA BLKSP,I
0338  04442 163773R   LDA HOCNT,I   GET HEADER COUNT
0339  04443 003004   CMA,INA       MAKE IT NEGATIVE
0340  04444 167051R   LDB ET10,I   B = USER'S BUFFER ADDR
0341  04445 170001   STA B,I       & PUT INTO 1ST WORD OF BUFFER
0342  04446 126432R   JMP EOHED,I

```

```

0344*   SUBROUTINE GBCCA: GET ADDRESSES FOR BCC ROUTINES
0345*       (B) = ROUTINE TYPE IDENTIFIER
0346*           0 = RECEIVED BCC PROCESSOR
0347*           1 = SENT BCC PROCESSOR
0348*           2 = BCC GENERATOR
0349*       (P) = JSB GBCCA
0350*       (A) = PTR TO BCC ROUTINE ADDR
0351*       (B) = BCC ROUTINE ADDR
0352*
0353  04447 000000 GBCCA NOP
0354  04450 163066R   LDA ENVIR,I   GET SPECIFIED ENVIRONMENT
0355  04451 000066   CLE,ELA       E =CRC/LRC FLAG (0/1)
0356  04452 062460R   LDA CRCTA
0357  04453 002040   SEZ           CRC BEING DONE (E =0)?
0358  04454 062464R   LDA LRCTA     NO
0359  04455 040001   ADA B         ADD OFFSET TO GET BCC   PROC ADDR
0360  04456 164000   LDB A,I       B = BCC ROUTINE ADDR
0361  04457 126447R   JMP GBCCA,I
0362*
0363  04460 004461R CRCTA DEF CRCT   ADDR OF CRC ROUTINES ADDR TABLE
0364  04461 003705R CRCT DEF CRCK   RECVD CRC PROCESSOR           0
0365  04462 004411R   DEF CRCS     SENT CRC PROCESSOR             1
0366  04463 003662R   DEF CRCG     CRC GENERATOR                   2
0367  04464 004465R LRCTA DEF LRCT   ADDR OF LRC ROUTINES ADDR TABLE
0368  04465 003732R LRCT DEF LRCK   RECVD LRC PROCESSOR           0
0369  04466 004474R   DEF LRCS     SENT LRC PROCESSOR             1
0370  04467 003725R   DEF LRCG     LRC GENERATOR                   2

```

```

0372*   SUBROUTINE GCHAR:  GET A CHAR FROM TRANSMISSION CODE TABLE
0373*
0374*       (B) = OFFSET OF CHAR FROM TOP OF TABLE
0375*       (P) = JSB GCHAR
0376*       (B) = CHAR
0377*
0378  04470 000000 GCHAR NOP
0379  04471 147064R   ADB TCTA,I   ADD TRANS. CODE TABLE ADDR
0380  04472 164001   LDB B,I       B = CHAR
0381  04473 126470R   JMP GCHAR,I

```

```

0383*   SUBROUTINE LRCS:  LRC PROCESSOR (SEND)
0384*       (P)   = JSB LRCS
0385*       (P+1) = NOT MEANINGFUL
0386*       (P+2) = LRC BYTE SENT
0387*
0388 04474 000000 LRCS  NOP
0389 04475 036474R  ISZ LRCS      BUMP RETURN
0390 04476 163765R  LDA BCC,I
0391 04477 001727  ALF,ALF
0392 04500 010073  AND B177      ISOLATE LRC BYTE
0393 04501 073761R  STA EBYTE     PREPARE TO SEND LRC BYTE
0394 04502 126474R  JMP LRCS,I

```

```

0396*   SUBROUTINE TYMSY:  SEE IF TIME TO SEND SYNC
0397*       (P)   = JSB TYMSY
0398*       (P+1) = NOT TIME TO SEND SYNC
0399*       (P+2) = TIME TO SEND SYNC
0400*
0401 04503 000000 TYMSY NOP
0402 04504 163772R  LDA ESTAT,I
0403 04505 002011  SLA,R8S      TIME TO SEND SYNC (TIMEOUT)?
0404 04506 126503R  JMP TYMSY,I  NO
0405 04507 010051  AND M2      CLEAR TIMEOUT FLAG (BIT 0)
0406 04510 173772R  STA ESTAT,I
0407 04511 036503R  ISZ TYMSY    BUMP RETURN
0408 04512 126503R  JMP TYMSY,I
0409          FND
** NO ERRORS*

```

.0	00399/04 00087/01
.1	00400/04 00168/01 00177/01 00474/02 00482/02 00041/03 00118/03 00146/03 00041/05 00208/05 00289/05 00024/06
.10	00409/04 00072/02 00170/03 00052/05 00194/05 00489/05 00144/06
.11	00410/04 00017/02 00099/02 00174/03 00024/05 00494/05 00225/06
.12	00411/04 00113/02 00180/03 00394/05
.13	00412/04 00076/03 00185/03 00144/05 00095/06
.14	00413/04 00336/01 00101/02 00189/03 00246/03
.15	00414/04 00193/03 00515/04 00021/05
.16	00248/02 00197/03
.17	00415/04 00417/03
.18	00447/03 00445/03
.2	00401/04 00170/01 00179/01 00422/01 00134/02 00471/02 00479/02 00129/03 00326/03 00169/05 00243/05 00412/05 00567/05 00166/06 00189/06 00212/06
.20	00249/02 00285/03
.21	00250/02 00488/01
.23	00109/01 00048/01 00057/01 00106/01
.27	00251/02 00057/03 00077/03 00276/03
.29	00252/02 00264/03 00318/03
.3	00402/04 00075/01 00085/01 00172/01 00181/01 00474/01 00482/01 00484/01 00045/02 00118/02 00123/02 00078/03 00133/03 00335/03 00351/03 00046/05 00163/05 00275/05 00285/05 00380/05 00085/06 00265/06
.30	00253/02 00275/03 00341/03
.31	00254/02 00035/01 00284/03 00343/03
.32	00255/02 00102/03 00277/03
.4	00403/04 00021/01 00045/01 00054/01 00183/01 00236/01 00137/03 00138/03 00497/04 00153/05 00236/06
.5	00404/04 00185/01 00230/01 00145/03 00409/03 00054/05 00259/05 00264/05 00386/05 00199/06
.6	00405/04 00478/01 00151/03 00402/03 00413/03 00425/03 00438/03

00207/05 00291/05 00116/06 00207/06

.61 00110/01 00072/01

.7 00406/04 00301/01 00202/02 00155/03 00156/03 00421/03 00189/05
00306/05

.8 00407/04 00069/01 00005/02 00099/03 00166/03 00201/03 00211/05
00248/05

.9 00408/04 00496/02 00166/03 00306/03 00380/03 00159/05 00240/05
00366/05 00216/06 00261/06

.CHRR 00495/04 00486/04

.CHRS 00563/05 00552/05

.ENTR 00025/01 00018/01

.LRID 00061/03 00013/03 00019/03

.SLCC 00113/01 00028/01

.SLCR 00114/01 00022/01

.SLCW 00115/01 00025/01

A 00416/04 00073/01 00093/01 00224/01 00274/01 00320/01 00360/01
00362/01 00399/01 00446/01 00025/02 00029/02 00054/02 00078/02
00087/02 00138/02 00156/02 00182/02 00187/02 00238/02 00528/02
00010/03 00093/03 00140/03 00213/03 00404/03 00427/03 00027/05
00034/05 00048/05 00058/05 00204/05 00015/06 00016/06 00360/06

A15ST 00147/03 00163/03 00176/03 00182/03

AC01 00391/02 00062/04

AC02 00392/02 00081/04 00133/04 00178/04 00232/04 00360/04

AC03 00393/02 00091/04 00143/04 00188/04

AC04 00394/02 00242/04

AC05 00395/02 00088/04 00197/04 00219/04 00226/04 00251/04 00272/04

AC06 00396/02 00273/04 00317/04

AC07 00397/02 00196/04 00198/04 00203/04 00204/04 00205/04 00206/04
00207/04 00208/04 00257/04 00258/04 00259/04 00260/04 00261/04
00262/04 00285/04 00301/04 00302/04 00327/04

AC08 00398/02 00199/04

AC09 00399/02

AC10 00400/02 00125/04 00127/04 00337/04 00352/04 00382/04 00389/04

AC11	00401/02	00063/04	00064/04	00065/04	00066/04	00067/04	00068/04
	00069/04	00070/04	00071/04	00072/04	00073/04	00074/04	00075/04
AC12	00402/02	00080/04	00084/04	00085/04	00086/04	00087/04	00089/04
	00090/04	00093/04	00132/04	00134/04	00135/04	00140/04	00145/04
	00171/04	00177/04	00179/04	00180/04	00183/04	00185/04	00186/04
	00187/04	00190/04	00231/04	00233/04	00234/04	00235/04	00236/04
	00237/04	00238/04	00239/04				
AC13	00403/02	00120/04	00220/04				
AC14	00404/02	00447/02	00114/04	00166/04	00211/04	00265/04	00331/04
	00336/04	00354/04	00393/04				
AC15	00405/02	00104/04	00156/04	00201/04	00255/04	00321/04	00344/04
	00383/04						
AC16	00406/02	00105/04	00157/04	00202/04	00256/04	00322/04	00345/04
	00359/04	00361/04	00362/04	00363/04	00364/04	00365/04	00366/04
	00367/04	00368/04	00369/04	00370/04	00371/04	00372/04	00384/04
AC17	00407/02	00113/04	00165/04	00217/04	00270/04	00353/04	00392/04
AC18	00408/02	00448/02	00342/04				
AC19	00409/02	00161/04	00326/04				
AC20	00410/02	00294/04					
AC21	00411/02	00218/04	00271/04				
AC22	00412/02	00279/04					
AC23	00413/02	00225/04	00303/04				
AC24	00414/02	00200/04					
AC25	00415/02	00308/04					
AC26	00416/02	00377/04	00378/04	00379/04	00380/04	00381/04	00385/04
	00386/04	00387/04	00388/04				
AC27	00417/02	00244/04	00391/04				
AC28	00418/02	00141/04	00240/04	00287/04	00295/04	00309/04	
AC29	00419/02	00449/02	00142/04	00241/04	00289/04	00296/04	00310/04
AC29A	00224/03	00095/03					
AC30	00420/02	00450/02	00138/04	00252/04	00318/04		
AC31	00421/02	00451/02	00249/04	00250/04	00315/04	00316/04	
AC32	00422/02	00209/04	00263/04	00329/04			

AC33	00423/02	00111/04	00254/04	00320/04
AC34	00424/02	00278/04		
AC35	00425/02	00253/04	00319/04	
AC36	00426/02	00112/04	00164/04	
AC37	00427/02	00102/04		
AC38	00428/02	00126/04	00136/04	00181/04
AC38A	00359/03	00354/03		
AC38C	00366/03	00328/03	00406/03	
AC38D	00360/03	00385/03	00394/03	
AC39	00429/02	00154/04		
AC40	00430/02	00137/04	00158/04	00182/04 00323/04
AC41	00431/02	00082/04	00083/04	
AC42	00432/02	00150/04	00151/04	00152/04 00153/04 00155/04 00162/04
AC43	00433/02	00139/04	00184/04	
AC44	00434/02	00172/04		
AC45	00435/02	00163/04	00210/04	00264/04 00328/04 00330/04 00343/04 00346/04 00347/04 00351/04 00390/04
AC46	00436/02	00092/04	00144/04	00189/04 00243/04
AC47	00437/02	00098/04	00099/04	00100/04 00101/04 00103/04 00106/04 00107/04 00108/04 00109/04 00110/04 00119/04 00348/04 00349/04 00350/04
AC48	00438/02	00280/04		
AC49	00439/02	00160/04	00325/04	
AC50	00440/02	00195/04		
AC51	00441/02	00159/04		
AC52	00442/02	00324/04		
ACCT	00123/01	00038/01	00043/01	00116/01
ACCTA	00116/01	00046/01		
ACT1	00454/02	00467/03		

ACT10	00122/03	00476/03
ACT11	00125/03	00477/03
ACT12	00129/03	00478/03
ACT13	00133/03	00479/03
ACT14	00137/03	00480/03
ACT15	00145/03	00481/03
ACT16	00151/03	00482/03
ACT17	00155/03	00483/03
ACT18	00160/03	00484/03
ACT19	00166/03	00485/03
ACT2	00468/02	00468/03
ACT20	00170/03	00486/03
ACT21	00174/03	00487/03
ACT22	00180/03	00488/03
ACT23	00185/03	00489/03
ACT24	00189/03	00490/03
ACT25	00193/03	00491/03
ACT26	00197/03	00492/03
ACT27	00201/03	00410/03 00493/03
ACT28	00206/03	00494/03
ACT29	00210/03	00495/03
ACT3	00471/02	00422/03 00469/03
ACT30	00238/03	00496/03
ACT31	00243/03	00497/03
ACT32	00257/03	00498/03
ACT33	00290/03	00499/03
ACT34	00293/03	00500/03
ACT35	00306/03	00501/03

ACT36 00318/03 00502/03
ACT37 00331/03 00503/03
ACT38 00347/03 00504/03
ACT39 00376/03 00505/03
ACT4 00479/02 00470/03
ACT40 00388/03 00414/03 00444/03 00506/03
ACT41 00397/03 00507/03
ACT42 00402/03 00508/03
ACT43 00409/03 00509/03
ACT44 00413/03 00510/03
ACT45 00417/03 00511/03
ACT46 00421/03 00512/03
ACT47 00425/03 00513/03
ACT48 00434/03 00514/03
ACT49 00438/03 00515/03
ACT4A 00484/02 00203/03 00207/03
ACT5 00489/02 00471/03
ACT50 00450/03 00516/03
ACT51 00455/03 00462/03 00517/03
ACT52 00461/03 00518/03
ACT5A 00512/02 00327/03 00399/03 00431/03
ACT5B 00071/03 00486/02 00514/02 00519/02
ACT5C 00509/02 00506/02
ACT6 00082/03 00472/03
ACT7 00098/03 00473/03
ACT8 00107/03 00474/03
ACT9 00118/03 00435/03 00452/03 00458/03 00475/03
ACTAD 00466/03 00398/01

ACXIT	00139/03	00157/03					
ASCII	00043/01	00039/01	00079/01				
ASCM	00303/02	00327/02	00328/02	00329/02	00330/02	00331/02	00332/02
	00333/02	00334/02	00335/02	00336/02	00337/02	00338/02	00339/02
	00340/02	00341/02	00342/02	00343/02			
ASCM A	00326/02	00445/01	00155/02				
B	00417/04	00023/01	00026/01	00029/01	00032/01	00034/01	00044/01
	00047/01	00049/01	00053/01	00056/01	00058/01	00060/01	00065/01
	00067/01	00070/01	00091/01	00095/01	00097/01	00102/01	00104/01
	00252/01	00257/01	00268/01	00269/01	00271/01	00278/01	00341/01
	00357/01	00364/01	00365/01	00377/01	00382/01	00390/01	00401/01
	00485/01	00486/01	00047/02	00052/02	00091/02	00136/02	00171/02
	00175/02	00178/02	00179/02	00205/02	00214/02	00024/03	00100/03
	00235/03	00308/03	00382/03	00440/03	00510/04	00014/05	00015/05
	00017/05	00031/05	00062/05	00110/05	00191/05	00200/05	00271/05
	00326/05	00331/05	00332/05	00360/05	00368/05	00402/05	00403/05
	00415/05	00449/05	00472/05	00193/06	00201/06	00209/06	00223/06
	00232/06	00285/06	00312/06	00341/06	00359/06	00380/06	
B100	00420/04	00081/01	00297/01	00257/03			
B17	00418/04	00174/05	00175/05				
B177	00421/04	00101/01	00010/05	00246/06	00293/06	00392/06	
B200	00256/02	00322/01	00039/05	00114/06			
B2000	00258/02	00324/01					
B300	00257/02	00166/01	00200/02				
B377	00422/04	00064/01	00264/01	00354/01	00393/01	00050/02	00516/02
	00242/06	00318/06					
B400	00499/05	00091/06					
B4000	00423/04	00339/03	00424/04				
B77	00419/04	00203/02					
BARCC	00491/05	00484/05	00488/05				
BCC	00511/05	00489/01	00166/05	00274/05	00375/05	00414/05	00416/05
	00455/05	00456/05	00481/05	00482/05	00087/06	00112/06	00148/06
	00168/06	00192/06	00194/06	00235/06	00297/06	00317/06	00324/06
	00390/06						
BDACK	00017/04	00278/04					
BINDX	00502/05	00152/05	00329/05				
BLKSP	00512/05	00253/01	00325/01	00491/01	00069/02	00098/02	00114/02

	00209/02	00164/05	00234/05	00244/05	00245/05	00258/05	00288/05
	00290/05	00292/05	00379/05	00331/06	00335/06	00337/06	
BL0UT	00212/04	00407/01					
BSCR	00475/04	00523/02	00074/03	00231/03	00372/03	00484/04	
BSC1	00532/05	00454/01	00074/02	00081/02	00103/02	00109/02	00125/02
	00490/02	00348/03	00377/03	00389/03	00536/05	00538/05	
BUFMT	00253/06	00066/06	00102/06	00125/06	00161/06	00174/06	00260/06
BYTE	00503/05	00011/05	00304/05	00314/05	00319/05	00398/05	00470/05
	00104/06	00163/06	00205/06	00210/06	00263/06	00294/06	
BYTLD	00279/05	00065/06	00101/06	00124/06	00160/06	00173/06	00259/06
	00282/06	00296/06	00303/06				
BYTST	00391/05	00499/04	00407/05				
CBCC	00411/05	00247/05	00251/05	00263/05	00406/05	00417/05	00299/06
CF01	00193/01	00169/01					
CF02	00202/01	00171/01	00173/01				
CF40	00204/01	00176/01					
CF41	00213/01	00178/01					
CF42	00220/01	00180/01					
CF43	00228/01	00182/01					
CF44	00230/01	00184/01					
CF45	00235/01	00186/01	00237/01				
CHARE	00031/05	00001/05	00003/05				
CHARP	00004/05	00028/05					
CHARR	00506/04	00495/04					
CHARS	00003/06	00563/05					
CHCHK	00515/04	00508/04					
CHRDE	00017/05	00518/04					
CKRES	00016/04	00249/04	00250/04	00252/04	00315/04	00316/04	00318/04
CLUST	00410/01	00367/01	00380/01	00402/01			
CMASK	00453/04	00509/01	00005/05	00571/05	00288/06		

CMBJF 00293/02 00004/02 00521/02 00027/03 00072/03
 CMES 00152/05 00131/05 00132/05 00133/05
 CMRET 00280/02 00438/01 00458/01 00006/02
 CNTRL 00002/04 00062/04 00080/04 00084/04 00085/04 00086/04 00087/04
 00089/04 00090/04 00093/04 00104/04 00113/04 00114/04 00120/04
 00156/04 00163/04 00165/04 00166/04 00200/04 00201/04 00210/04
 00211/04 00217/04 00218/04 00220/04 00225/04 00255/04 00264/04
 00265/04 00270/04 00271/04 00294/04 00303/04 00308/04 00321/04
 00328/04 00330/04 00331/04 00336/04 00337/04 00343/04 00344/04
 00346/04 00347/04 00351/04 00352/04 00353/04 00354/04 00377/04
 00378/04 00379/04 00380/04 00381/04 00383/04 00384/04 00385/04
 00386/04 00387/04 00388/04 00390/04 00392/04 00393/04
 CONVL 00281/02 00523/01 00212/03 00222/03
 CRCD 00423/05 00428/05 00430/05 00432/05 00434/05 00436/05 00438/05
 00440/05 00442/05
 CRCG 00425/05 00443/05 00366/06
 CRCK 00447/05 00457/05 00460/05 00364/06
 CRCK2 00458/05 00451/05
 CRCS 00310/06 00320/06 00321/06 00365/06
 CRCS2 00321/06 00314/06 00326/06
 CRCT 00364/06 00363/06
 CRCTA 00363/06 00356/06
 CSTO 00023/06 00007/06
 CTLEN 00454/04 00014/02 00027/02 00506/04
 CTLWA 00455/04 00026/02 00511/04
 CTNXT 00456/04 00018/02 00464/02 00509/04 00514/04
 CURAC 00411/01 00387/01 00395/01 00397/01
 CURRQ 00282/02 00304/01 00525/01 00334/03
 DECR1 00181/05 00349/05
 DLE 00141/01 00301/05 00156/06 00162/06 00187/06
 DLECC 00311/05 00102/05
 DLEOT 00211/05 00192/05
 DLSTX 00280/05 00100/05

EBCM	00347/02	00371/02	00372/02	00373/02	00374/02	00375/02	00376/02
	00377/02	00378/02	00379/02	00380/02	00381/02	00382/02	00383/02
	00384/02	00385/02	00386/02	00387/02			
EBCMA	00370/02	00443/01	00153/02				
EBDIC	00052/01	00037/01					
EBUFA	00513/05	00493/01	00477/04	00370/05	00371/05	00396/05	00404/05
	00534/05	00182/06	00183/06	00283/06	00295/06		
EBUFL	00514/05	00495/01	00478/04	00392/05	00535/05	00179/06	00180/06
	00280/06						
EBYTE	00504/05	00006/05	00303/05	00426/05	00454/05	00479/05	00570/05
	00362/05	00157/06	00188/06	00247/06	00289/06	00319/06	00393/06
ECCT	00140/01	00036/01	00052/01	00117/01			
ECCTA	00117/01	00055/01					
EFIXC	00034/02	00487/01					
EFIXL	00035/02	00074/01	00090/01				
EFLEN	00033/02	00034/02	00035/02				
EN,EN	00012/04	00199/04					
ENDTX	00254/06	00046/06					
ENSEN	00418/01	00424/01	00076/02	00083/02	00105/02	00127/02	00492/02
	00350/03	00379/03	00391/03				
ENVIR	00466/04	00328/01	00439/01	00012/02	00149/02	00493/02	00504/02
	00107/03	00247/03	00352/03	00007/05	00382/05	00243/06	00267/06
	00290/06	00354/06					
ENXT	00515/05	00497/01	00483/04	00498/04	00012/05	00119/05	00156/05
	00182/05	00296/05	00352/05	00353/05	00555/05	00568/05	00569/05
	00013/06	00109/06	00237/06				
EOHED	00330/06	00239/05	00246/05	00252/05	00334/06	00342/06	
EQT09	00444/04	00197/02	00210/02				
EQT10	00445/04	00207/01	00215/01	00220/01			
EQT11	00447/04	00210/01	00217/01	00223/01			
EGTAD	00443/04	00473/01					
EGTXP	00015/01	00020/01	00071/01	00077/01	00088/01	00089/01	
ERET	00457/04	00499/01	00485/04	00061/05	00540/05		

ERRWE	00011/04	00196/04	00198/04	00203/04	00204/04	00205/04	00206/04
	00207/04	00208/04	00209/04				
ESTAT	00516/05	00501/01	00120/02	00481/04	00018/05	00020/05	00146/05
	00282/05	00284/05	00448/05	00453/05	00459/05	00485/05	00491/05
	00493/05	00537/05	00023/06	00025/06	00113/06	00115/06	00175/06
	00204/06	00300/06	00311/06	00316/06	00323/06	00402/06	00406/06
ET04	00274/02	00250/01	00258/01	00475/01	00477/01		
ET10	00449/04	00479/01	00077/02	00086/02	00093/02	00106/02	00092/03
	00210/03	00215/03	00228/03	00368/03	00340/06		
ET11	00275/02	00481/01	00094/02	00097/02	00107/02	00094/03	00211/03
	00214/03	00221/03	00223/03	00369/03			
ET14	00276/02	00260/01	00483/01	00154/05	00178/05		
ETX.B	00216/06	00136/06	00137/06				
ETXBT	00215/06	00206/06	00211/06				
EV00	00446/02	00061/04	00079/04	00131/04	00176/04	00230/04	00358/04
EV14	00447/02	00097/04	00149/04	00194/04	00248/04	00314/04	00376/04
EV18	00448/02	00341/04					
EV29	00449/02	00216/04	00269/04				
EV30	00450/02	00124/04	00170/04	00224/04	00277/04	00284/04	00293/04
	00300/04	00307/04	00335/04				
EV31	00451/02	00118/04					
EVENT	00412/01	00352/01	00372/01	00388/01	00252/03	00274/03	
EVOFF	00413/01	00375/01	00381/01				
EVOUT	00402/01	00379/01					
EXEC	00006/01	00083/01					
GARB	00144/05	00143/05	00177/05	00202/05	00339/05	00341/05	00342/05
	00345/05	00347/05	00385/05				
GBCCA	00353/06	00270/05	00359/05	00413/05	00190/06	00222/06	00231/06
	00361/06						
GCHAR	00378/06	00109/05	00190/05	00367/05	00061/06	00262/06	00381/06
H0800	00424/04	00019/05	00283/05	00492/05			
H1000	00425/04	00238/03	00452/05	00315/06			

H1400	00259/02 00282/03 00301/03
H2000	00426/04 00500/02 00086/03 00026/06
H4000	00427/04 00050/01 00548/05
H8000	00428/04 00162/03 00181/03 00332/03 00434/03 00451/03 00456/03 00461/03 00491/04
H9000	00500/05 00378/05
HBFFF	00260/02 00059/01 00161/03 00331/03 00450/03
HDCNT	00517/05 00503/01 00236/05 00377/05 00338/06
HE000	00343/01 00212/02
HEFFF	00261/02 00243/03 00458/05 00322/06 00336/06
HFEFF	00564/05 00542/05
HFF00	00262/02 00206/01 00214/01 00251/01 00499/02 00046/03 00005/03 00300/03 00338/03
HFF7F	00065/05 00037/05
HFF8F	00139/02 00063/02
HFFDF	00177/03 00175/03
HIGH	00343/03 00476/02 00114/03 00240/03 00393/03 00314/03 00336/03
HNGUP	00024/04 00105/04 00157/04 00202/04 00256/04 00322/04 00345/04 00359/04 00361/04 00362/04 00363/04 00364/04 00365/04 00366/04 00367/04 00368/04 00369/04 00370/04 00371/04 00372/04
ICCTR	00518/05 00505/01 00117/05 00142/05
IDBAD	00055/03 00018/03
IDCNT	00062/03 00011/03 00020/03
IDCOM	00026/03 00015/03
IDFLS	00283/02 00204/01 00209/01 00213/01 00216/01 00527/01 00048/02 00460/02 00515/02
IDLEN	00010/03 00025/03
IDNXT	00016/03 00034/03 00048/03
IDODD	00041/03 00030/03
IDOK	00049/03 00040/03
IDRLN	00063/03 00001/03 00014/03

IDTMP 00264/03 00526/02 00053/03
IDTST 00229/03 00039/03 00043/03
IDWD1 00265/03 00008/03 00052/03 00056/03
INCHR 00142/05 00130/05 00134/05 00135/05 00137/05
INPRT 00093/05 00013/05
INTRY 00269/03 00104/03 00263/03 00290/03
ITBC 00144/06 00139/06
ITXBC 00230/06 00044/06
KEY 00458/04 00339/01 00511/01 00487/04 00553/05
LCONT 00339/01 00292/01 00315/01
LDSYN 00559/05 00033/06
LOW 00341/03 00420/01 00457/01 00112/02 00109/03 00112/03 00115/03
00237/03 00254/03 00296/03 00298/03 00315/03
LRCG 00469/05 00473/05 00370/06
LRCK 00477/05 00461/05 00462/05 00478/05 00490/05 00495/05 00368/06
LRCS 00388/06 00369/06 00389/06 00394/06
LRCT 00368/06 00367/06
LRCTA 00367/06 00358/06
LRIDA 00266/03 00026/03 00031/03 00035/03 00044/03
LTCS 00294/02 00295/01 00318/01 00016/02 00135/02 00236/02 00098/03
00139/03 00307/03 00381/03 00403/03 00426/03 00439/03 00047/05
00057/05
LU 00014/01 00019/01 00080/01 00082/01 00086/01
LVTRN 00199/06 00177/06
M1 00429/04 00096/01 00079/02 00108/02 00229/03 00370/03 00030/05
M10 00436/04 00322/05 00546/05 00027/06
M11 00263/02 00234/02
M14 00264/02 00158/02
M16 00494/04 00116/05

M17	00265/02 00522/02 00073/03
M2	00430/04 00094/01 00202/01 00088/02 00163/02 00037/03 00106/06 00110/06 00195/06 00202/06 00405/06
M20	00266/02 00457/02
M27	00060/03 00507/02
M29	00111/01 00061/01
M3	00431/04 00248/01 00448/01 00453/01 00131/02 00161/02 00510/02 00362/03
M30	00437/04 00066/01 00103/01 00489/04 00255/05
M32	00267/02 00174/01
M4	00432/04 00451/01 00196/05
M5	00433/04 00033/01 00550/05
M64	00112/01 00068/01 00105/01
M7	00434/04 00333/01 00455/02 00527/02
M8	00435/04 00113/05
MAXCC	00460/04 00513/01 00316/05
MID	00277/03 00253/03 00273/03 00283/03 00286/03 00302/03 00312/03 00340/03
MPCTR	00244/02 00235/02 00240/02
MPFLS	00461/04 00233/01 00235/01 00247/01 00249/01 00400/01 00421/01 00423/01 00515/01 00043/02 00062/02 00064/02 00130/02 00132/02 00461/02 00473/02 00475/02 00481/02 00483/02 00509/02 00511/02 00512/02 00103/03 00119/03 00147/03 00239/03 00244/03 00258/03 00333/03 00355/03 00361/03 00363/03 00035/05 00042/05 00114/05 00541/05 00543/05 00090/06 00092/06
NEXST	00414/01 00363/01 00404/01
NLTO	00285/02 00226/01 00529/01 00128/02 00458/02 00484/02 00502/02 00088/03 00217/03 00364/03 00397/03
NCM3	00438/04 00508/02 00430/03 00488/04 00490/04
NOSTR	00156/05 00160/05 00167/05 00170/05 00249/05 00265/05 00276/05 00307/05
NOTCC	00330/05 00318/05
NTRY	00462/04 00222/01 00293/01 00316/01 00517/01 00456/02

NTXCC	00131/06	00126/06					
OTPRT	00032/06	00014/06					
PAD	00174/05	00096/05					
PBCC	00505/05	00147/06	00167/06	00191/06	00298/06		
PCLUS	00365/01	00406/01					
PHA	00269/02	00340/01	00469/01				
PHB	00270/02	00160/01	00163/01	00287/01	00290/01	00310/01	00313/01
PHCOM	00506/05	00549/05	00572/05	00011/06			
PHTIM	00507/05	00547/05	00573/05	00012/06			
PRET	00439/04	00191/01	00198/01	00472/01	00492/04	00502/04	00574/05
	00028/06						
PRETF	00440/04	00245/01	00470/01				
PRETV	00271/02	00246/01	00282/01				
PRTA	00333/05	00312/05	00330/05				
PRVAC	00286/02	00392/01	00396/01	00531/01	00498/02	00084/03	
PRYST	00287/02	00353/01	00358/01	00533/01	00279/03	00299/03	00337/03
PTR	00334/05	00195/05	00197/05	00199/05	00321/05	00323/05	00325/05
PVACK	00288/02	00535/01	00359/03	00384/03	00393/03		
RDBCC	00358/05	00103/05					
RDC0D	00312/05	00125/05	00217/05	00068/06	00127/06		
RDTXT	00216/05	00098/05					
READ	00006/04	00125/04	00132/04	00134/04	00135/04	00140/04	00145/04
	00159/04	00161/04	00171/04	00324/04	00326/04		
RENG	00003/04	00082/04	00083/04	00098/04	00099/04	00100/04	00101/04
	00103/04	00106/04	00107/04	00108/04	00109/04	00110/04	00112/04
	00119/04	00139/04	00184/04				
REOTR	00023/04	00242/04	00348/04	00349/04	00350/04		
RERR	00004/04	00111/04					
RET1	00050/05	00045/05					
RET2	00060/05	00056/05					

RIBCC 00269/05 00099/05

RIDAD 00289/02 00218/01 00537/01 00007/03

RIDCT 00067/03 00006/03 00016/03 00049/03

RIDNO 00068/03 00517/02 00004/03 00050/03

RLSYN 00108/05 00094/05

RREAD 00009/04 00127/04 00177/04 00179/04 00180/04 00183/04 00185/04
00186/04 00187/04 00190/04 00342/04

RREQ 00005/04 00102/04

RRET 00032/05 00023/05 00026/05 00145/05 00179/05 00205/05 00212/05
00241/05 00362/05 00387/05 00395/05

RRIDA 00069/03 00028/03 00032/03 00036/03 00045/03

RRVI 00038/04 00138/04

RSTA2 00169/05 00140/05

RSTAR 00074/05 00033/05

RSTAT 00064/05 00032/05 00060/05

RTCC 00338/05 00311/05

RTCTR 00463/04 00294/01 00317/01 00519/01 00110/03 00113/03 00269/03
00272/03

RTEXT 00007/04 00126/04 00136/04 00137/04 00150/04 00151/04 00152/04
00153/04 00154/04 00155/04 00158/04 00160/04 00162/04 00164/04
00172/04 00181/04 00182/04

RTTXT 00331/05 00101/05

RXDLE 00258/05 00232/05

RXENQ 00239/05 00223/05 00340/05

RXETB 00243/05 00227/05 00344/05

RXETX 00246/05 00226/05 00343/05

RXITB 00497/04 00229/05 00346/05

RXOTH 00234/05 00222/05 00224/05 00225/05 00228/05

RXSTX 00251/05 00230/05 00297/05

RXSYN 00255/05 00120/05 00139/05 00231/05 00354/05

SASOH 00259/06 00047/06

SCM 00435/01 00437/01 00472/02 00480/02 00497/02 00083/03 00202/03
 00360/03
 SCMTF 00460/01 00436/01 00447/01 00148/02 00157/02
 SCON 00010/06 00545/05
 SEA 00352/01 00203/01 00305/01 00337/01 00058/03 00079/03 00265/03
 00278/03 00287/03 00321/03 00324/03 00342/03 00344/03
 SEAER 00407/01 00374/01 00405/01
 SEAF 00383/01 00408/01
 SETIS 00498/04 00183/05 00262/05 00286/05 00295/05 00381/05
 SETPM 00109/06 00105/06
 SETUP 00468/01 00162/01 00289/01 00312/01 00476/01 00231/02
 SETXT 00085/06 00081/06 00096/06
 SIDAD 00290/02 00211/01 00539/01 00053/02
 SIDIF 00042/02 00044/02 00057/02 00489/02 00347/03 00376/03 00388/03
 SLC 00017/01 00004/01 00041/01 00099/01
 SLCC 00159/01 00113/01 00161/01
 SLCER 00239/01 00165/01 00188/01 00300/01 00302/01 00330/01 00332/01
 00335/01 00270/06
 SLCPC 00198/01 00465/02 00468/02
 SLCR 00286/01 00114/01 00288/01
 SLCW 00309/01 00115/01 00311/01
 SLCXT 00244/01 00200/01 00212/01 00219/01 00227/01 00229/01 00234/01
 00240/01 00122/03 00126/03 00130/03 00134/03 00142/03 00148/03
 00152/03 00167/03 00171/03 00186/03 00190/03 00194/03 00198/03
 00418/03 00446/03
 SLERR 00019/06 00005/06
 SOENG 00382/05 00369/05
 SOHCR 00159/05 00136/05
 SOHST 00366/05 00104/05
 SOM 00162/05 00138/05 00209/05
 SPAD 00242/06 00045/06

SPCTA	00119/01	00031/01
SRBGN	00051/06	00034/06
SRCCT	00072/06	00067/06
SRHDR	00124/05	00095/05
SRPRT	00129/05	00124/05
ST00	00061/04	00030/04
ST01	00079/04	00031/04
ST02	00097/04	00032/04
ST03	00118/04	00033/04
ST04	00124/04	00034/04
ST05	00131/04	00035/04
ST06	00149/04	00036/04
ST07	00170/04	00037/04
ST08	00176/04	00038/04
ST09	00194/04	00039/04 00212/04
ST10	00216/04	00040/04
ST11	00224/04	00041/04
ST12	00230/04	00042/04
ST13	00248/04	00043/04
ST14	00269/04	00044/04
ST15	00277/04	00045/04
ST16	00284/04	00046/04
ST17	00293/04	00047/04
ST18	00300/04	00048/04
ST19	00307/04	00049/04
ST20	00314/04	00050/04
ST21	00335/04	00051/04
ST22	00341/04	00052/04

ST23	00358/04	00053/04						
ST24	00376/04	00054/04						
ST25	00395/04	00055/04						
STADT	00029/04	00359/01						
STATE	00291/02	00194/01	00231/01	00356/01	00386/01	00541/01	00325/03	
STEM	00076/03	00530/02	00054/03	00232/03	00373/03			
STICK	00187/05	00097/05						
STRTX	00288/05	00281/05						
STX	00143/01	00187/05	00280/05	00103/06				
STX?	00101/06	00036/06	00039/06					
STXCH	00147/02	00073/02	00102/02	00124/02	00164/02			
STXT	00061/02	00065/02	00206/03	00216/03				
STXT3	00113/02	00096/02						
STXT4	00134/02	00459/01						
STXT5	00124/02	00119/02						
SYCNT	00521/05	00507/01	00551/05	00560/05				
TCSET	00060/01	00051/01						
TCTA	00464/04	00521/01	00193/05	00320/05	00200/06	00208/06	00379/06	
TINC2	00567/05	00083/06	00142/06					
TLOG	00465/04	00259/01	00010/02	00068/02	00084/02	00085/02	00208/02	
	00531/02	00003/03	00091/03	00220/03	00367/03	00372/05	00373/05	
	00405/05	00185/06	00186/06	00302/06				
TOCTR	00292/02	00002/02	00129/02	00485/02	00503/02	00089/03	00218/03	
	00259/03	00262/03	00319/03	00322/03	00365/03	00398/03		
TRACE	00169/02	00275/01	00391/01	00188/02	00206/02			
TRAIN	00196/02	00167/01	00298/01	00323/01	00216/02			
TRET	00061/05	00020/06	00213/06	00255/06				
TRFWA	00297/02	00024/02	00228/02					
TRINC	00223/02	00267/01	00273/01	00180/02	00185/02	00186/02	00227/02	
	00229/02							

TRLWA	00298/02	00030/02	00224/02	00462/02	00512/04		
TRNEW	00295/02	00266/01	00270/01	00276/01	00279/01	00020/02	00170/02
	00177/02	00181/02					
TROLD	00296/02	00022/02	00172/02	00176/02			
TRTMP	00217/02	00272/01	00277/01	00204/02	00215/02		
TRTXT	00153/06	00040/06					
TSTX	00207/05	00188/05					
TTSYN	00351/05	00348/05					
TXBCC	00221/06	00043/06					
TXBEG	00098/02	00071/02					
TXDLE	00173/06	00042/06					
TXRET	00299/02	00008/02	00066/02	00133/02			
TXTCC	00221/05	00216/05					
TXTXT	00121/06	00037/06					
TYMSY	00401/06	00051/06	00121/06	00153/06	00404/06	00407/06	00408/06
ULRC	00101/01	00063/01					
UNOPN	00001/04	00063/04	00064/04	00065/04	00066/04	00067/04	00068/04
	00069/04	00070/04	00071/04	00072/04	00073/04	00074/04	00075/04
	00081/04	00133/04	00178/04	00232/04	00360/04		
WCONV	00021/04	00142/04	00241/04	00273/04	00289/04	00296/04	00310/04
	00317/04	00323/04	00325/04				
WENG	00010/04	00088/04	00197/04	00219/04	00226/04		
WEUT	00022/04	00091/04	00092/04	00143/04	00144/04	00188/04	00189/04
	00243/04						
WPREV	00015/04	00257/04	00258/04	00259/04	00260/04	00261/04	00262/04
	00263/04	00285/04	00301/04	00327/04	00329/04		
WRENQ	00019/04	00253/04	00319/04				
WRITE	00013/04	00195/04	00231/04	00233/04	00234/04	00235/04	00236/04
	00237/04	00238/04	00239/04	00279/04	00280/04	00302/04	00309/04
WRN02	00020/04	00302/04					
WTRY	00018/04	00254/04	00320/04				

WTEXT 00014/04 00141/04 00240/04 00251/04 00272/04 00287/04 00295/04
00309/04

WTTD 00025/04 00244/04 00391/04

X2SET 00070/01 00107/01

XENG 00090/06 00074/06 00269/06

XITRD 00500/04 00112/05 00149/05 00157/05 00253/05 00256/05 00272/05
00361/05

XITS 00499/04 00148/05 00237/05 00305/05

XITX 00570/05 00073/06 00077/06 00078/06 00080/06 00082/06 00132/06
00134/06 00135/06 00138/06 00140/06 00149/06 00165/06 00224/06
00233/06

XITX1 00569/05 00088/06 00117/06 00145/06 00217/06 00226/06 00238/06
00265/06

XITXS 00568/05 00063/06 00107/06 00158/06 00169/06 00196/06 00249/06

XMIT1 00065/06 00052/06

XMTSY 00059/06 00561/05 00035/06 00038/06 00041/06

XMITT 00160/06 00154/06

XNTSY 00053/06 00562/05 00123/06

XPAD 00225/06 00075/06 00076/06 00093/06 00133/06

XSOH 00095/06 00079/06

XSYN 00147/06 00141/06

ZLOOP 00238/02 00241/02

ZSTAT 00233/02 00228/01 00242/02 00454/02