

DOS III DISC MONITOR
(REV A)

BINARY TAPE	24307-60002
SOURCE TAPES	24307-80012
	24307-80013
	24307-80014
	24307-80015
SOURCE LISTING	24307-90002

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0001

ASMB,L,X,C,N,R,B DOS-III DISC MONITOR (DISCM)

** NO ERRORS*

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0001      ASMB,L,X,C,N,R,B   DOS=III  DISC MONITOR (DISCM)
0002      00000      NAM DISCM
0003      ENT SCIC,$STRT,$LDEX,EXEC,$DISC,$IDL1
0004      ENT $MDLD,$RGER,$JLDD,$MOVE
0005      ENT $ABRT,$WAIT,$SETQ,$BLOP
0006      ENT SCIC3,$AVE$,SCLER,$OPER
0007      ENT ERR01,ERR03,ERR04,ERR05
0008      ENT LCHK,$DMA,$MBSY,$LDVR
0009      ENT DRVR,ERRTN,IO,40
0010      ENT $TYPE,$SYIO,$RTN
0011      ENT DEF04,DEF19,DEF20,DEF31,DEF32,DEF33
0012      EXT $EX01,$EX02,$EX03,$EX04,$EX05,$EX06,$EX07
0013      EXT $EX08,$EX09,$EX10,$EX11,$EX12,$EX13,$EX14
0014      EXT $EX15,$EX16,$EX17,$EX18,$EX19,$EX20
0015      EXT $EX30,$EX31,$EX32,$EX33
0016      EXT $EX34,$EX35,$EX36,$EX37
0017      EXT $SETP,$PFAL
0018      ENT $BUF,$B1,$B2,$B3,$B4,$B5,$B31,$B35,$B64
0019      ENT $B65,$B66,$B77,$B95,$B125,$B127,$B128
0020      ENT $CLCK,$IRT,$EOAB

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DISC OPERATING SYSTEM

MAJOR SECTIONS:

1. CENTRAL INTERRUPT CONTROL PROCESSOR
2. EXECUTIVE SUPERVISOR
3. I/O SUPERVISOR

0033*

0034***** CENTRAL INTERRUPT CONTROL PROCESSOR *****

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0079*

0080*

0081*

0082*

THE PROCESSING OF SYSTEM INTERRUPTS IS CONTROLLED BY DIRECTING ALL SOURCES TO THE ENTRY POINT <SCIC>. <SCIC> IS RESPONSIBLE FOR SAVING AND RESTORING THE CURRENT STATE OF THE COMPUTER, ANALYZING THE SOURCE OF THE INTERRUPT, AND ACTIVATING THE PROCESSOR. THIS ROUTINE IS TABLE DRIVEN BY THE INTERRUPT TABLE.

WHEN THE PRIVILEGED INTERRUPT I/O CARD IS INCLUDED IN THE SYSTEM, THE CLASS OF PRIVILEGED INTERRUPTS ARE PROCESSED INDEPENDENTLY OF REGULAR SYSTEM OPERATION.

I. INTERRUPT TABLE

A TABLE, ORDERED BY HARDWARE INTERRUPT PRIORITY THAT DESIGNATES THE ASSOCIATED SOFTWARE PROCESSOR AND THE PROCEDURE FOR INITIATING THE PROCESSOR. THE INTERRUPT TABLE IS CONSTRUCTED BY THE SYSTEM GENERATOR ON INFORMATION SUPPLIED BY THE USER. THE TABLE CONSISTS OF ONE ENTRY PER INTERRUPT SOURCE. THE CONTENTS OF EACH VALID ENTRY IS THE PROCESSOR IDENTIFIER.

1. SYSTEM - THE ADDRESS OF THE EQT ENTRY IDENTIFYING THE I/O DEVICE.

2. ILLEGAL - AN ENTRY CORRESPONDING TO AN ILLEGAL INTERRUPT SOURCE CONTAINS ZERO.

THE PROCESSOR IS CALLED DIRECTLY IN RESPONSE TO A STANDARD INTERRUPT:

1. CLOCK
2. MEMORY PROTECT
3. I/O DEVICE DRIVER

II. INTERRUPT PROCESSING

INTERRUPT ACKNOWLEDGEMENT BY THE CPU CAUSES THE INSTRUCTION IN THE WORD CORRESPONDING TO THE I/O CHANNEL ADDRESS TO BE EXECUTED. FOR ALL ACTIVE I/O CHANNELS (PLUS 4-7) CONTROLLED BY THE SYSTEM, THE INSTRUCTION SET IN EACH INTERRUPT LOCATION IS A JSB SCIC,I.

FOR ALL ACTIVE I/O CHANNELS CONTROLLED BY PRIVILEGED INTERRUPT PROCESSING ROUTINES, THE I/O TRAP CELL IS FILLED WITH A SUBROUTINE JUMP DIRECTLY TO THE ENTRY POINT OF ITS ASSOCIATED SPECIAL ROUTINE. (THE ADDRESS OF THE PRIVILEGED INTERRUPT ROUTINE IS PROVIDED BY THE 'ENT,NAME' OPTION WHEN CONFIGURING THE INTERRUPT TABLE DURING SYSTEM GENERATION.

SCIC PERFORMS THE FOLLOWING

1. DISABLES THE INTERRUPT SYSTEM
2. SAVES ALL REGISTERS AND RETURN POINT
3. CLEARS THE FLAG OF THE INTERRUPT SOURCE, SET MPTFL, TURN ON INTERRUPT SYSTEM FOR PRIVILEGED INTERRUPTS ONLY IF THERE IS PRIVILEGED INTERRUPT CARD PRESENT.
4. TRANSFERS DIRECTLY TO THE INTERRUPT PROCESSOR FOR SOURCES OF:
 - 4 - POWER FAILURE
 - 5 - MEMORY PROTECT VIOLATION
 - (TBG) - TIME BASE GENERATOR
5. FOR OTHER SOURCES, THE INTERRUPT SOURCE CODE IS USED TO INDEX THE INTERRUPT TABLE. THE CONTENTS OF THE INTERRUPT ENTRY IS ASSUMED TO BE THE FWA OF THE EQT ENTRY. THE ADDRESSES OF THE 17 WORD ENTRY ARE SET IN EQT1-EQT17 AND CONTROL TRANSFERRED DIRECTLY TO THE COMPLETION SECTION ADDRESS.(WORD 2 OF EQT ENTRY)
6. ILLEGAL INTERRUPTS ARE IGNORED.
7. RETURN FROM I/O DRIVER INDICATES CONTINUATION OR COMPLETION OF THE OPERATION BY THE DRIVER OR DEVICE:
 - A. (P+1)- OPERATION COMPLETE. SCIC TRANSFERS DIRECTLY TO THE SIOC COMPLETION SECTION <SIOCM>. CONTROL IS NOT RETURNED TO SCIC.
 - B. (P+2)- CONTINUATION OF THE OPERATION. SCIC RESTORES REGISTERS AND RETURNS TO THE POINT OF INTERRUPTION.

0084*
 0085*
 0086*
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 0114*
 0115*
 0116*
 0117*
 0118*
 0119*

0121	00000	000000	SCIC	NOP	ENTRY TO SCIC
0122	00001	103100		CLF 0	DISABLE INTERRUPT SYSTEM
0123	00002	016071R		JSB SEQAB	SAVE E,O,A,B REGISTERS
0124	00003	102504		LIA 4	GET INTERRUPT SOURCE CODE AND
0125	00004	072060R		STA INTSC	SAVE INTERRUPT SOURCE CODE
0126	00005	032001R		IOR SCIC+1	CONSTRUCT A CLF XX INSTRUCTION
0127	00006	072007R		STA **+1	AND CLEAR INTERRUPT FLAG.
0128	00007	000000		NOP	
0129	00010	016123R		JSB \$INT SET	MPTFL. TURN ON INTERRUPT SYS, ETC
0130	00011	062000R		LDA SCIC	
0131	00012	070242		STA XSUSP	SAVE POINT OF SUSPENSION
0132	00013	066060R		LDB INTSC	GET INTERRUPT SOURCE CODE
0133	00014	054057		CPB .4	CHECK IF POWER FAIL
0134	00015	016036X		JSB SPFAL	YES.
0135	00016	102505		LIA 5	GET VIOLATING ADDRESS FOR EXEC
0136	00017	054060		CPB .5	CHECK IF MEMORY PROTECT
0137	00020	026515R		JMP \$EXEC	GO TO EXEC PROCESSOR
0138	00021	054103		CPB TBG	CHECK IF TIME BASE GENERATOR
0139	00022	016201R		JSB \$CLCK	-YES, EXECUTE CLOCK ROUTINE
0140	00023	044045		ADB N6	
0141	00024	074000		STB A	
0142	00025	003021		CMA,SSA,RSS	MUST BE BETWEEN 6 AND INT#
0143	00026	026046R		JMP CIC.3	
0144	00027	040202		ADA INT#	
0145	00030	002020		SSA	
0146	00031	026046R		JMP CIC.3	
0147	00032	044201		ADB INTAB	CHECK IF INTERRUPT ASSIGNED
0148	00033	160001		LDA B,I	
0149	00034	050203		CPA EQT1	EQT ADDRESSES ALREADY SET?
0150	00035	026041R		JMP CIC.2	
0151	00036	002003		SZA,RSS	
0152	00037	026046R		JMP CIC.3	
0153	00040	017704R		JSB SETEQ	SET EQT ENTRIES
0154	00041	062060R	CIC.2	LDA INTSC	
0155	00042	164204		LDB EQT2,I	CALL DRIVER AT CONTINUATION ADDR
0156	00043	114001		JSB B,I	
0157	00044	026235R		JMP \$IOCM	(P+1): COMPLETION RETURN
0158	00045	016107R		JSB OPRAT	CHECK IF OPRTR POUNDING ON KYBD
0159	00046	060242	CIC.3	LDA XSUSP	
0160	00047	016101R		JSB ADCHK	
0161	00050	026055R		JMP CIC.4	
0162	00051	060242		LDA XSUSP	SET UP TRANSFER ADDR FOR SIRT
0163	00052	070137		STA XIRT	
0164	00053	016061R		JSB SEQAB	RESTORE REGISTERS
0165	00054	026134R		JMP SIRT	RESTORE INTERRUPT SYS, MEM PROT
0166*					& RETURN.
0167	00055	016061R	CIC.4	JSB SEQAB	RESTORE REGISTERS
0168	00056	016150R	SKIP3	JSB \$IRT1	NOP IF NO PRIV INT.
0169	00057	124242		JMP XSUSP,I	
0170	00046		SCIC3	EQU CIC.3	
0171*					
0172	00060	000000	INTSC	NOP	
0173*					
0174*					
0175	00061	000000	SEQAB	NOP	
0176	00062	060241		LDA XEO	

0177	00063	103101	CLO	RESTORE
0178	00064	000036	SLA,ELA	E,
0179	00065	102101	STF 1	O,
0180	00066	060237	LDA XA	A, AND
0181	00067	064240	LDB XB	B REGISTERS
0182	00070	126061R	JMP SEOAB,I	
0183*				
0184	00071	000000	SEOAB NOP	
0185	00072	070237	STA XA	SAVE
0186	00073	074240	STB XB	A,
0187	00074	001520	ERA,ALS	B,
0188	00075	102201	SOC	E,
0189	00076	002004	INA	AND
0190	00077	070241	STA XEO	O REGISTERS
0191	00100	126071R	JMP SEOAB,I	RETURN
0192*				
0193	00101	000000	ADCHK NOP	
0194	00102	003000	CMA	
0195	00103	040254	ADA UFWA	
0196	00104	002020	SSA	
0197	00105	036101R	ISZ ADCHK	
0198	00106	126101R	JMP ADCHK,I	
0199*				
0200	00107	000000	OPRAT NOP	
0201	00110	060260	LDA OPATN	
0202	00111	002003	SZA,RSS	OPRTR TRYING TO SAY SOMETHING?
0203	00112	126107R	JMP OPRAT,I	-NO, BACK TO WORK
0204	00113	160333	LDA CHARC+1,I	GET SYST. TTY STATUS FROM EQT
0205	00114	064261	LDB OPFLG	GET TTY BUSY FLAG
0206	00115	046505R	ADB \$OPER	ADD OP. ATTN. LOCKOUT FLAG
0207	00116	006003	SZB,RSS	SAFE TO LET
0208	00117	002020	SSA	OPRTR IN?
0209	00120	126107R	JMP OPRAT,I	-NO, LET HIM COOL HIS HEELS
0210*				
0211	00121	074260	STB OPATN	CLEAR OP. ATTN. FLAG
0212	00122	027772R	JMP STYPE	GO SEE WHAT OPRTR WANTS

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0214*
0215**** $INT SETS MPTFL. IF THE PRIVILEGED INTERRUPT
0216* CARD IS PRESENT, IT SETS CONTROL TO THE
0217* SPECIAL I/O CARD, DEFERS DMA COMPLETION
0218* INTERRUPTS AND RE-ENABLES THE INTERRUPT SYSTEM.
0219*
0220 00123 000000 $INT NOP
0221 00124 002404 CLA,INA SET MPTFL TO 1 -- MEM PROT IS OFF.
0222 00125 070271 STA MPTFL
0223 00126 126123R SKIP2 JMP $INT,I NOP IF PRIV. INT.
0224 00127 102700 STC1 STC 0 CONFIGURED BY CFG AT SYSTEM STARTU
0225 00130 106706 CLC 6
0226 00131 106707 CLC 7 DEFER DMA COMPLETION INTERRUPTS
0227 00132 102100 STF 0 RE-ENABLE INT. SYS FOR PRIVILEGED
0228* INTERRUPTS ONLY.
0229 00133 126123R JMP $INT,I RETURN
0230*
0231*
0232** $IRT IS JUMPED TO AFTER COMPLETION OF NORMAL
0233* SYSTEM PROCESSING FOR PROPER RESTORATION OF
0234* MEMORY PROTECT AND INTERRUPT SYSTEM.
0235* IF PRIVILEGED INTERRUPT CARD IS PRESENT, $IRT
0236* CLEARS CONTROL & SETS FLAG ON THE SPECIAL I/O
0237* CARD, AND ENABLES THE ACTIVE DMA CHANNELS
0238* MEMORAY PROTECT IS TURNED ON AND MPTFL IS SET
0239* TO 0 IF MPCOD HAS THE CODE STC 5. MEMORAY PROTECT
0240* IS REMAINED OFF AND MPTFL IS SET TO 1 IF MPCOD IS
0241* AN NOP (USER WANTS MEMORAY PROTECT OFF).
0242* CONTROL IS THEN TRANSFERED TO THE LOC SPECIFIED IN XIRT.
0243*
0244* CALLING SEQUENCE: LDA < TRANSFER ADDRESS >
0245* STA XIRT
0246* JMP $IRT
0247*
0248*
0249 00134 103100 $IRT CLF 0 DISABLE INTERRUPT SYSTEM
0250 00135 016150R SKIP1 JSB $IRT1 NOP IF NO PRIV.INT. CARD
0251 00136 072473R STA TEMPZ SAVE A=REG
0252 00137 062146R LDA MPCOD
0253 00140 052774R CPA CLC5 IF CLC 5, THEN SET MPTFL TO 1
0254 00141 002405 CLA,INA,RSS
0255 00142 002400 CLA IF STC 5, THEN SET MPTFL TO 0
0256 00143 070271 STA MPTFL
0257 00144 062473R LDA TEMPZ RESTORE REG A
0258 00145 102100 STF 0
0259 00146 102705 MPCOD STC 5 THIS IS NOP IF USER REQ. MEM PROT OF
0260 00147 124137 JMP XIRT,I XIRT IS THE TRANSFER ADDRESS.
0261*
0262*
0263***** $IRT1 CHECKS THE CONDITION OF DMA CHANNELS.
0264* IF NON-ZERO (ACTIVE), THEN SET CONTROL TO ENABLE
0265* INTERRUPT. DMA CHANNEL 1 STATUS IS INDICATED BY THE
0266* FIRST ENTRY IN INTERRUPT TABLE; CHANNEL #2 BY THE
0267* SECOND ENTRY OF INTERRUPT TABLE.
0268* IT ALSO CLEARS CNTRL & SETS FLAG ON THE PRIV. INT.CARD
0269*

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0270	00150	000000	SIRT1	NOP	
0271	00151	103100		CLF 0	TURN INTERRUPT OFF.
0272	00152	072473R		STA TEMPZ	SAVE A-REG.
0273	00153	160201		LDA INTAB,I	GET 1ST ENTRY
0274	00154	002003		SZA,RSS	ACTIVE?
0275	00155	026162R		JMP IRT2	NO.
0276	00156	062060R		LDA INTSC	YES, BUT DON'T SET
0277	00157	050061		CPA .6	CONTROL IF LAST INTERRUPT
0278	00160	002001		RSS	WAS FROM THE SAME DMA
0279	00161	102706		STC 6	
0280	00162	060201	IRT2	LDA INTAB	
0281	00163	002004		INA	
0282	00164	160000		LDA A,I	GET 2ND ENTRY
0283	00165	002003		SZA,RSS	2ND DMA CHANNEL ACTIVE?
0284	00166	026173R		JMP IRT3	NO.
0285	00167	062060R		LDA INTSC	YES.
0286	00170	050062		CPA .7	
0287	00171	002001		RSS	
0288	00172	102707		STC 7	
0289	00173	002400	IRT3	CLA	
0290	00174	072060R		STA INTSC	CLEAR INTERRUPT SELECT CODE
0291	00175	062473R		LDA TEMPZ	RESTORE A-REGISTER
0292	00176	106700	CLC1	CLC 0	CLEAR CONTROL &
0293	00177	102100	STF1	STF 0	SET FLAG ON PRIV. INT CARD
0294*					
0295	00200	126150R		JMP SIRT1,I	
0296*					

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0298***** <SCLOCK> PROCESSES 1/10TH OF SECOND TIME BASE GENERATOR INTER
0299* RUPTS. IF EXECUTION CLOCK IS ON, THEN IT IS INCREMENTED AND
0300* CHECKED FOR MAXIMUM EXECUTION TIME EXCEEDED. A MESSAGE IS
0301* OUTPUT AND SABRT PROCEDURE TAKEN
0302*
0303 00201 000000 SCLOCK NOP
0304 00202 060303 LDA TBFLG GET DATA COMM TIME BASE FLAG
0305 00203 002002 SZA IF NON-ZERO, EXECUTE
0306 00204 114000 JSB A,I DATA COMM ROUTINE
0307*
0308 00205 034105 ISZ CLOCK+1 INCR 600'S OF MIN COUNTER
0309 00206 026212R JMP CLCK1
0310 00207 062234R LDA N600 RESET SECONDS COUNTER
0311 00210 070105 STA CLOCK+1
0312 00211 034104 ISZ CLOCK INCREMENT MINUTE COUNTER
0313 00212 060106 CLCK1 LDA CLEX CHECK IF PROGRAM EXECUTING
0314 00213 002025 SSA,INA,RSS
0315 00214 034107 ISZ CLEX+1 INCR EXEC 600 S OF MIN COUNTER
0316 00215 126201R JMP SCLOCK,I
0317 00216 070106 STA CLEX
0318*
0319*
0320 00217 062234R LDA N600 RESET 600'S OF MIN COUNT
0321 00220 070107 STA CLEX+1
0322 00221 060106 LDA CLEX
0323 00222 050110 CPA CXMX MAXIMUM EXECUTION TIME EXCEEDED?
0324 00223 002001 RSS YES, ERROR.
0325 00224 126201R JMP SCLOCK,I
0326*
0327 00225 016361R JSB SCLER
0328 00226 064056 LDB .3
0329 00227 060242 LDA XSUSP INTERRUPT FROM IDLE LOOP?
0330 00230 016101R JSB AUCHK
0331 00231 027353R JMP MD13 -YES, USE VADR
0332 00232 060242 LDA XSUSP -NO, INTERRUPT ADDR, OK
0333 00233 027354R JMP MD13+1
0334*
0335 00234 176650 N600 DEC -600

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0337***** INPUT/OUTPUT COMPLETION PROCESSOR *****

0338*

0339* <SIOCM> IS ENTERED DIRECTLY FROM CENTRAL INTERRUPT CONTROL

0340* PROCESSOR WHEN AN I/O OPERATION IS TERMINATED AND ALL ERROR

0341* RECOVERY PROCEDURES HAVE BEEN ATTEMPTED.

0342** ON ENTRY TO THIS ROUTINE, (A) IS STATUS FROM DRIVER AND (B)

0343* CONTAINS THE NUMBER OF WORDS/CHARACTERS TRANSFERRED.

0344* THE CENTRAL INTERRUPT PROCESSOR HAS SET ADDRESSES OF EQUIPMENT

0345* TABLE ENTRY INTO EQT1-EQT17.

0346* THE ROUTINE RELEASES THE DMA CHANNEL IF ASSIGNED.

0347* IF MALFUNCTION HAS OCCURRED, THE NECESSARY PROCESSING AND

0348* MESSAGE IS OUTPUT PRIOR TO SETTING DEVICE DOWN.

0349*

0350	00235	170217	SIOCM	STA	EQT13,I	SAVE DRIVER STATUS
0351	00236	174220		STB	EQT14,I	SAVE TRANSMISSION LOG
0352	00237	017671R		JSB	RCHAN	GO TO RELEASE DMA IF ASSIGNED
0353	00240	160206		LDA	EQT4,I	SET AV FIELD TO AVAILABLE
0354	00241	001265		RAL,CLE,ERA		
0355	00242	170206		STA	EQT4,I	
0356	00243	060315		LDA	IODMD	CHECK IF DRIVER IN I/O
0357	00244	003004		CMA,INA		DRIVER MODULE AREA
0358	00245	050203		CPA	EQT1	
0359	00246	070315		STA	IODMD	YES, SO SET AREA AVAILABLE
0360	00247	160217		LDA	EQT13,I	
0361	00250	073475R		STA	ECODE	SAVE COMP.CODE FOR EX13
0362	00251	072477R		STA	EC2	SAVE COMPL.CODE FOR PRIV. MODE
0363	00252	002002		SZA		MALFUNCTION OCCURRED?
0364	00253	026352R		JMP	IOC10	-YES
0365	00254	160211		LDA	EQT7,I	
0366	00255	070307		STA	TEMP2	SAVE RETURN ADDRESS
0367	00256	016101R		JSB	ADCHK	SYSTEM RETURN?
0368	00257	026327R		JMP	IOC50	YES.
0369	00260	064262		LDB	SWAP	GET JOB PROCESSOR IN/OUT FLAG
0370	00261	060141		LDA	EXPG	
0371	00262	006011		SLB,RSS		
0372	00263	002003		SZA,RSS		
0373	00264	026307R		JMP	IOC04	
0374	00265	160212		LDA	EQT8,I	
0375	00266	002021		SSA,RSS		
0376	00267	003004		CMA,INA		
0377	00270	050052		CPA	N1	CHECK IF INPUT REQUEST
0378	00271	007401		CCB,RSS		YES
0379	00272	026307R		JMP	IOC04	NO
0380	00273	044111		ADB	BATCH	EQUIPMENT ADDRESS
0381	00274	044121		ADB	LUTAB	
0382	00275	140001		ADA	B,I	
0383	00276	016005R		JSB	MPY17	MULTIPLY BY 17
0384	00277	050203		CPA	EQT1	CHECK IF BATCH IS CURRENT DEVICE
0385	00300	002001		RSS		YES
0386	00301	026307R		JMP	IOC04	NO
0387	00302	160214		LDA	EQT10,I	CHECK IF 1ST CHAR IS COLON
0388	00303	160000		LDA	A,I	
0389	00304	010075		AND	M1774	
0390	00305	052470R		CPA	COLON	
0391	00306	026335R		JMP	IOC05	-YES
0392	00307	164213	IOC04	LDB	EQT9,I	

0393	00310	005222		RBL,RBL	
0394	00311	006020		SSB	I/O W/O WAIT?
0395	00312	026320R		JMP IOC06	=SYSTEM OR NO WAIT
0396	00313	160206	OPAGO	LDA EQT4,I	
0397	00314	164220		LDB EQT14,I	
0398	00315	016071R		JSB SEQAB	SAVE A AND B VALUES
0399	00316	160211		LDA EQT7,I	
0400	00317	070242		STA XSUSP	SET RETURN ADDRESS
0401	00320	016107R	IOC06	JSB OPRAT	CHECK IF OPRTR POUNDING ON KYBD
0402	00321	016115R		JSB SAVES	SAVE REGS FOR EXEC MODS
0403	00322	062505R		LDA PAFLG	
0404	00323	052315R		CPA CODE+1	
0405	00324	026332R		JMP IOC60	
0406	00325	017606R		JSB WAITX	CHECK IF ANYTHING QUEUED UP
0407	00326	026424R		JMP IOCWT	CHECK IF I/O WITH WAIT
0408*					
0409*					
0410	00327	160206	IOC50	LDA EQT4,I	GET DEVICE STATUS.
0411	00330	164220		LDB EQT14,I	AND TRANSMISSION LOG
0412	00331	124307		JMP TEMP2,I	=SYSTEM RETURN
0413*					
0414*					
0415	00332	060203	IOC60	LDA EQT1	
0416	00333	072506R		STA SVEQT	
0417	00334	027641R		JMP \$WAIT	
0418	00335	160214	IOC05	LDA EQT10,I	
0419	00336	066504R		LDB N36	
0420	00337	017712R		JSB \$MOVE	MOVE DATA FROM USER BUFFER
0421	00340	000340R	IOC02	DEF *	TO JOB INPUT BUFFER
0422	00341	160220		LDA EQT14,I	CHECK IF USER REQ'D CHAR OR WORD
0423	00342	164215		LDB EQT11,I	AND CONVERT TO WORDS
0424	00343	006021		SSB,RSS	
0425	00344	026347R		JMP ++3	
0426	00345	002004		INA	
0427	00346	001100	.1100	OCT 1100	=ARS= INSTRUCTION
0428	00347	070332		STA CHARC	SAVE INPUT WORD COUNT
0429	00350	067743R		LDB .13	SET FOR ILLEGAL INPUT MSG.
0430	00351	026400R		JMP ERR	
0431	00352	070275	IOC10	STA \$MDBF+1	SAVE ERROR CODE FOR SEX13
0432*					
0433	00353	160213		LDA EQT9,I	
0434	00354	001222		RAL,RAL	I/O W/O WAIT
0435	00355	010133		AND MDFLG	& MDFLG BIT 15 SET?
0436	00356	002021		SSA,RSS	
0437	00357	026364R		JMP IOC20	=NO
0438	00360	060275		LDA \$MDBF+1	GET ERROR CODE BACK
0439	00361	050056		CPA .3	PARITY ERR?
0440	00362	026371R		JMP IOC30	=YES
0441	00363	026376R		JMP IOC40	=NO
0442	00364	060275	IOC20	LDA \$MDBF+1	
0443	00365	050054		CPA .1	POSSIBLE DISC NOT READY?
0444	00366	006400		CLB	=YES, SET B#0 FOR SEX17, SEX04
0445*					
0446*					
0447	00367	017312R		JSB NRPAR	CHECK IF SEX17,SEX20, OR SSRCH
0448	00370	006002		SZB	=NO, CHECK IF DISC PARITY ERR.

```

0449 00371 160206 IOC30 LDA EQT4,I
0450 00372 012502R AND ETYPE ISOLATE EQPMT. TYPE CODE
0451 00373 066624R LDB .12
0452 00374 052503R CPA DISC DISC PARITY ERROR?
0453 00375 026400R JMP ERR
0454 00376 016115R IOC40 JSB SAVES
0455 00377 064057 LDB .4 SET FOR I/O ERR MSG
0456*
0457* SAVE ERROR CODE FOR EX13 IN ECODE & THAT FOR PRIV. INT
0458* IN EC2 WHICH IS:
0459* 0 FOR I/O COMPLETED WITHOUT ERRORS
0460* -1 DEVICE NOT READY
0461* -2 END OF TAPE
0462* -3 PARITY ERROR
0463* -4 BATCH INPUT DETECTED '!'
0464*
0465 00400 077475R ERR STB ECODE
0466 00401 062477R LDA EC2
0467 00402 057743R CPB .13 BATCH INPUT ERR?
0468 00403 060057 LDA .4 YES. *4 FOR PRIV. MODE
0469 00404 003004 CMA,INA
0470 00405 072477R STA EC2
0471*
0472*** IF I/O ERROR, SET DEVICE DOWN.
0473*
0474 00406 054057 CPB .4 I/O ERROR?
0475 00407 002001 RSS YES
0476 00410 026424R JMP IOCWT NO. DON'T SET DEV DOWN
0477 00411 060206 LDA EQT4
0478 00412 050333 CPA TYEQT SYSTEM TTY?
0479 00413 026424R JMP IOCWT NO. DON'T SET IT DOWN
0480 00414 160206 LDA EQT4,I ISOLATE EQUIPMENT TYPE.
0481 00415 001727 ALF,ALF
0482 00416 010072 AND M77
0483 00417 053500R CPA B31 DON'T SET DISC DOWN
0484 00420 026424R JMP IOCWT
0485 00421 160206 LDA EQT4,I SET BIT 14
0486 00422 033477R IOR MASK8
0487 00423 170206 STA EQT4,I
0488*
0489*
0490 00424 067475R IOCWT LDB ECODE
0491 00425 160211 LDA EQT7,I GET RETURN ADDR
0492 00426 016101R JSB ADCHK RETURN TO SYS?
0493 00427 026467R JMP CKSRH CHECK FILE SEARCH
0494 00430 160213 LDA EQT9,I
0495 00431 001222 RAL,RAL
0496 00432 002020 SSA I/O WITH WAIT?
0497 00433 026451R JMP BIT15 NO. CHECK BIT 15 OF MDPLG
0498*
0499***** PROCESS I/O WITH WAIT *****
0500*
0501 00434 160211 LDA EQT7,I SET SUSPENSION PT. TO
0502 00435 070242 STA XSUSP RETURN ADDRESS
0503 00436 060133 LDA MDPLG BIT 0 OF MDPLG = 1?
0504 00437 000010 SLA

```

PAGE 0013 #01 DISC OPERATING SYSTEM CORE RESIDENT PROCESSOR

```

0505 00440 026444R      JMP IOWT1      YES, BYPASS SYSTEM ERR HANDLING
0506 00441 006002      IOWT0 SZB        NO, RETURN IF NO ERR &
0507 00442 027353R      JMP MD13        LOAD EXEC 13 IF THERE IS ERR,
0508 00443 026046R      JMP CIC,3
0509*
0510*---- PROCESS I/O WITH WAIT & MDPLG BIT 0=1 ----
0511*
0512 00444 060242      IOWT1 LDA XSUSP      SET UP XIRT
0513 00445 070137      STA XIRT
0514 00446 062477R      LDA EC2          RETURN TO USER WITH A=REG*ERR COD
0515 00447 164220      LDB EQT14,I      AND B=REG WITH TLOG
0516 00450 026134R      JMP SIRT
0517*
0518*
0519****** PROCESS I/O WITHOUT WAIT *****
0520*
0521 00451 060133      BIT15 LDA MDPLG      BIT 15 OF MDPLG = 1?
0522 00452 002021      SSA,RSS
0523 00453 026462R      JMP IONW        NO
0524 00454 160211      LDA EQT7,I      YES, GET USER SUBROUTINE ADDR
0525 00455 002004      INA
0526 00456 073476R      STA SUBAD
0527 00457 062477R      LDA EC2          LOAD A=REG W/ RETURN CODE
0528 00460 164220      LDB EQT14,I      LOAD B REG W/ TRANSMISSION LOG
0529 00461 117476R      JSB SUBAD,I      EXECUTE USER SUBROUTINE
0530*
0531 00462 060133      IONW  LDA MDPLG      BIT 0 = 1?
0532 00463 000010      SLA
0533 00464 026046R      JMP CIC,3        YES, RETURN TO SUSPENSION PT.
0534 00465 067475R      LDB ECODE      NO, GO CHECK IF ERR OCCURRED
0535 00466 026441R      JMP IOWT0
0536*
0537*
0538 00467 060164      CKSRH LDA FILRW      FILE SRCH W/O WAIT?
0539 00470 002003      SZA,RSS
0540 00471 026441R      JMP IOWT0      -NO.
0541 00472 001665      ELA,CLE,ERA      -YES, CLEAR BIT 15 TO GET
0542 00473 170211      STA EQT7,I      RETRN ADDR IN EQT7
0543 00474 002400      CLA              CLEAR FILE R/W FLAG
0544 00475 070164      STA FILRW
0545 00476 026451R      JMP BIT15
0546 00477 000000      EC2  NOP
0547*
0548 00500 000507R      EXECA DEF EXEC
0549 00501 176000      MASK1 OCT 176000
0550 00502 077400      ETYPE OCT 77400
0551 00503 014400      DISC  OCT 14400
0552 00504 177734      N36   DEC -36
0553 00505 000000      SOPER NOP
0554 00506 000000      SVEQT NOP

```

0556***** EXECUTIVE SUPERVISOR *****

0557*

0558*

0559*

0560*

0561*

0562*

0563*

0564*

0565*

0566*

0567*

0568*

0569*

0570*

0571*

0572*

0573*

0574*

0575*

0576*

0577*

0578*

0579*

0001*

0002*

0003*

0004*

0005*

0006*

0007*

0008*

0009*

0010*

0011*

0012*

0013*

0014*

0015*

0016*

0017*

0018*

0019*

0020*

0021*

0022*

0023*

0024*

0025*

0026*

0027*

0028*

0029*

0030*

0031*

0032*

THE PRIMARY FUNCTION OF THE EXECUTIVE SUPERVISOR IS TO PROVIDE GENERAL CHECKING AND EXAMINATION OF SYSTEM SERVICE REQUESTS AND TO CALL THE APPROPRIATE PROCESSING EXECUTIVE MODULE OR I/O SUPERVISOR MODULE

THIS PROGRAM IS ENTERED EITHER FROM CENTRAL INTERRUPT CONTROL<SCIC> SECTION WHEN A MEMORY PROTECT VIOLATION IS ACKNOWLEDGED(ONLY IN A 2116 WITH THE MEMORY PROTECT OPTION) OR BY A DIRECT JSB EXEC. WHILE IN SYSTEM (JOB PROCESSOR OR FILE MANAGER) A DIRECT CALL MAY BE MADE TO EXEC.

SYSTEM REQUEST FORMAT:

THE GENERAL FORMAT OF A SYSTEM REQUEST IS BLOCK CONTAINING AN EXECUTABLE INSTRUCTION TO GAIN ENTRY TO THE EXECUTIVE AND AN ADDRESS LIST OF PARAMETERS. THE FIRST PARAMETER IS A NUMERIC CODE IDENTIFYING THE REQUEST TYPE. A NEGATIVE REQUEST CODE IS FROM OTHER PARTS OF SYSTEM AND A POSITIVE REQUEST CODE IS FROM USER PROGRAM. THE LENGTH OF THE PARAMETER LIST VARIES ACCORDING TO THE AMOUNT OF INFORMATION REQUIRED FOR EACH REQUEST. THE CALLS MAY BE SPECIFIED IN FORTRAN OR ASSEMBLY LANGUAGE:

CALL EXEC(P1,P2,...,PN)

OR

EXT EXEC

JSB EXEC

DEF ++1+N

DEF RCODE

DEF P1

DEF P2

.

.

.

DEF PN

-RETURN POINT-

RCODE DEC N (N IS NEGATIVE IF SYSTEM)

P1

P2

. DEF/OCT/DEC,ETC TO DEFINE A ADDRESS, CONSTANT

.

.

PN

MEMORY PROTECT ERROR:

IF THE INSTRUCTION CAUSING THE PROTECT VIOLATION IS NOT A JSB EXEC, THEN AN ERROR IS ASSUMED. A DIAGNOSTIC IS OUTPUT TO THE SYSTEM TELETYPE LISTING THE ADDRESS OF THE VIOLATING INSTRUCTION. IF ABORT DUMP IS SPECIFIED, IT IS TAKEN PRIOR TO LOOKING FOR NEXT :JOB STATEMENT

0033* THE FOLLOWING EXEC REQUESTS RESULT IN AN EXECUTIVE MODULE
 0034* PROCESSOR BEING READ IN AN EXECUTED.

0035*
 0036* A. DISC TRACK ALLOCATION - THIS IS A SPECIAL ROUTINE TO ACCOMO-
 0037* DATE CHECKOUT OF REAL TIME EXECUTIVE PROGRAMS ON DISC
 0038* MONITOR, THIS ROUTINE PROVIDES USER WITH NEXT WORK
 0039* TRACK, INITIAL REQUEST RETURNS FIRST WORK TRACK.

0040*
 0041* (P) JSB EXEC
 0042* (P+1) DEF **6 DEFINE EXIT POINT
 0043* (P+2) DEF RCODE DEFINE REQUEST CODE
 0044* (P+3) DEF #TRAK DEFINE # CONTIGUOUS TRACKS
 0045* (P+4) DEF TRACK DEFINE TRACK ADDRESS
 0046* (P+5) DEF DISC DEFINE DISC LOGICAL UNIT ADD
 0047* (P+6) DEF SECT# DEFINE # SECTORS/TRACK
 0048* (P+7) ---
 0049* RCODE DEC 4
 0050* #TRAK DEC N (# TRACKS) 15#0 FOR ABORT
 0051* TRACK NOP (STORE TRACK #) SET#-1 IF UNAVA
 0052* DISC NOP (STORE DISC LOGICAL UNIT #)
 0053* SECT# NOP (STORE # SECTORS/TRACK)
 0054*

0055* B. PROGRAM COMPLETION -

0056*
 0057* (P) JSB EXEC CALL TO EXEC
 0058* (P+1) DEF **2 DEFINE RETURN ADDRESS
 0059* (P+2) DEF RCODE DEFINE REQUEST CODE
 0060* (P+3) ---
 0061* RCODE DEC 6
 0062*

0063* C. PROGRAM SUSPENSION

0064*
 0065* (P) JSB EXEC CALL TO EXEC
 0066* (P+1) DEF **2 DEFINE RETURN ADDRESS
 0067* (P+2) DEF RCODE DEFINE REQUEST CODE
 0068* (P+3) ---
 0069* RCODE DEC 7
 0070*

0071* D. PROGRAM SEGMENT LOAD - LOAD PROGRAM SEGMENT AND EXECUTE

0072*
 0073* (P) JSB EXEC CALL TO EXEC
 0074* (P+1) DEF **3 DEFINE RETURN ADDRESS
 0075* (P+2) DEF RCODE DEFINE REQUEST CODE
 0076* (P+3) DEF SNAME DEFINE ASCII SEGMENT ADDRESS
 0077* (P+4) ---
 0078* RCODE DEC 8
 0079* SNAME ASC 3,XXXXX
 0080*

E. TIME REQUEST - STORE CURRENT CLOCK TIME IN USER'S ARRAY

```

0082*
0083*
0084*      (P)      JSB EXEC      CALL TO EXEC
0085*      (P+1)    DEF **3      DEFINE RETURN ADDRESS
0086*      (P+2)    DEF RCODE     DEFINE REQUEST CODE
0087*      (P+3)    DEF ARRAY     DEFINE 5 WORD TIME ARRAY ADD
0088*      (P+4)    ---
0089*      RCODE    DEC 11
0090*      ARRAY    BSS 5      (1)=100TH OF SECONDS
0091*                                (2)=SECONDS
0092*                                (3)=MINUTES
0093*                                (4)=HOURS
0094*                                (5)=DAYS WILL BE SET TO 0
0095*

```

F. DISC TRACK STATUS OF WORK AREA

```

0096*
0097*
0098*      (P)      JSB EXEC      CALL TO EXEC
0099*      (P+1)    DEF **5      DEFINE RETURN ADDRESS
0100*      (P+2)    DEF RCODE     DEFINE REQUEST CODE
0101*      (P+3)    DEF NTRAK     DEFINE DESIRED # OF TRACKS
0102*      (P+4)    DEF TRACK     DEFINE STARTING TRACK #
0103*      (P+5)    DEF STRAK     DEFINE ADDR FOR ACTUAL TRK#
0104*      (P+6)    ---
0105*      RCODE    DEC 16
0106*      NTRAK    DEC N      # CONSECUTIVE TRACKS
0107*      TRACK    DEC M      DESIRED STARTING TRACK #
0108*      STRAK    NOP      ACTUAL STARTING TRACK #
0109*

```

G. DISC TRACK LIMITS FOR WORK AREA

```

0110*
0111*
0112*      (P)      JSB EXEC      CALL TO EXEC
0113*      (P+1)    DEF **5( OR 6) DEFINE RETURN ADDRESS
0114*      (P+2)    DEF RCODE     DEFINE REQUEST CODE
0115*      (P+3)    DEF FTRAK     DEFINE ADDR FOR FIRST TRACK
0116*      (P+4)    DEF LTRAK     DEFINE ADDR FOR LAST TRACK
0117*      (P+5)    DEF SIZE      DEFINE ADDR FOR #SECT/TRACK
0118*      (P+6)    DEF DISC (OPTIONAL PARAMETER)
0119*      (P+7)    ---
0120*      RCODE    DEC 17
0121*      FTRAK    NOP      FIRST WORK TRACK #
0122*      LTRAK    NOP      LAST WORK TRACK #
0123*      SIZE     NOP      # SECTORS PER TRACK
0124*      DISC     DEC N      N=0 FOR SYSTEM DISC
0125*                                N= NON-0 FOR CURRENT USER DISC
0126*

```

H. FILE NAME SEARCH

```

0127*
0128*
0129*      (P)      JSB EXEC      CALL TO EXEC
0130*      (P+1)    DEF **4      DEFINE RETURN ADDRESS
0131*      (P+2)    DEF RCODE     DEFINE REQUEST CODE
0132*      (P+3)    DEF FNAME     DEFINE ADDR FOR FILE NAME
0133*      (P+4)    DEF NSECT     DEFINE ADDR FOR #SECTORS
0134*      (P+5)    ---
0135*      RCODE    DEC 18
0136*      FNAME    ASC 3,XXXXX  ASCII FILE NAME
0137*      NSECT    NOP      # SECTORS IN FILE; 0 IF FILE

```

0138*
0139*

CANNOT BE FOUND

0141*

0142* I. CHANGE USER DISC ASSIGNMENTS

0143*

0144*

(P) JSB EXEC

0145*

(P+1) DEF **3(**+4 IF OPTIONAL PARAM USED)

0146*

(P+2) DEF RCODE

0147*

(P+3) DEF LABEL

0148*

(P+4) DEF SUBCH(OPTIONAL)

0149*

(P+5) ---

0150*

RCODE DEC 23 REQUEST CODE

0151*

LABEL ASC 3,XXXXXX XXXXXX IS DISC LABEL

0152*

SUBCH DEC (0-7) IF PRESENT, IT DEFINES THE REQUESTED DISC SUBCHANNEL

0153*

0154*

0155*

0156* J. LOAD AND EXECUTE USER EXEC MODULES, PASSING 0-5 PARAMETERS

0157*

(P) JSB EXEC

0158*

(P+1) DEF **2(UP TO 7) DEFINE RETURN ADDRESS

0159*

(P+2) DEF RCODE DEFINE REQUEST CODE

0160*

(P+3) DEF PARM1 DEFINE 1ST PARAMETER ADDRESS

0161*

(P+4) ---

0162*

RCODE DEC 27 (OR 28)

0163*

0165	00507	000000	EXEC	NOP	
0166	00510	103100		CLF 0	
0167	00511	016071R		JSB SEOAB	SAVE EOAB REGISTERS
0168	00512	016123R		JSB \$INT	SET MPTFL, TURN INTERRUPT, ETC 1
0169	00513	062507R		LDA EXEC	GET ADDRESS OF CALL TO EXEC
0170	00514	040052		ADA N1	
0171*					
0172	00515	070314	\$EXEC	STA VADR	SAVE VIOLATION ADDRESS
0173	00516	070242		STA XSUSP	SAVE POINT OF SUSPENSION
0174	00517	070306		STA TEMP1	
0175	00520	034306		ISZ TEMP1	SAVE (P+1) OF CALL
0176	00521	160000		LDA A,I	GET VIOLATING INSTRUCTION
0177	00522	052001R		CPA \$CIC+1	
0178	00523	026055R		JMP CIC,4	
0179	00524	012501R		AND MASK1	AND CHECK IF IT IS
0180	00525	052337R		CPA JSBI	JSB ,I
0181	00526	002001		RSS	YES
0182	00527	026534R		JMP MPERR	NO, SO MEMORY PROTECT ERROR
0183	00530	120314		XOR VADR,I	CHECK IF EFF. OPERAND IS EXEC
0184	00531	160000		LDA A,I	
0185	00532	052500R		CPA EXECA	
0186	00533	026537R		JMP JSBEX	
0187	00534	006405	MPERR	CLB,INB,RSS	SET FOR MEMORY PROTECT MSG
0188	00535	064060	ERR01	LDB .5	
0189	00536	027353R		JMP MD13	
0190	00537	064306	JSBEX	LDB TEMP1	CHECK RETURN ADDRESS
0191	00540	160001		LDA B,I	
0192	00541	016101R		JSB ADCHK	
0193	00542	027337R		JMP RQERR	
0194*					
0195	00543	060164		LDA FILRW	FILE R/W W/O WAIT IN PROCESS?
0196	00544	002003		SZA,RSS	
0197	00545	026562R		JMP EX2	=NO, CONTINUE
0198	00546	060133		LDA MDFLG	
0199	00547	001310		RAR,SLA	MODE FLAG BIT 1 SET?
0200	00550	026556R		JMP EX1	=YES.
0201*					
0202*	WHEN FILE SEARCH W/O WAIT & MDFLG BIT 1=0, HOLD OFF EXEC				
0203*	CALL BY SAVING CALLING POINT IN RQRTN & SET BIT 15 OF				
0204*	RQRTN (FOR \$EX06), AND GO TO WAIT LOOP AT THE MEANTIME.				
0205*					
0206	00551	060054		LDA .1	
0207	00552	001300		RAR	(CAN'T DO ELA,CCE,ERA1)
0208	00553	030314		IOR VADR	
0209	00554	070225		STA RQRTN	
0210	00555	027641R		JMP \$WAIT	
0211*					
0212*--	WHEN FILE SEARCH W/O WAIT & BIT 1 OF MDFLG = 1, INSTEAD OF				
0213*	GOING TO WAIT LOOP, RETURN TO USER WITH A=REG=8.				
0214*					
0215	00556	160001	EX1	LDA B,I	GET RETURN ADDR
0216	00557	070137		STA XIRT	
0217	00560	060063		LDA .8	
0218	00561	026134R		JMP \$IRT	
0219*					
0220	00562	160001	EX2	LDA B,I	

0221	00563	070225	STA RQRTN	SAVE RETURN ADDRESS
0222	00564	007004	CMB,INB	CHECK IF REQUEST CODE GIVEN
0223	00565	040001	ADA B	
0224	00566	002003	SZA,RSS	
0225	00567	027337R	JMP RQERR	NO REQUEST CODE
0226	00570	040052	ADA N1	
0227	00571	070224	STA RQCNT	SAVE # OF ACTUAL PARAMETERS
0228	00572	002020	SSA	CHECK IF LEGAL NUMBER OF PARAM
0229	00573	027337R	JMP RQERR	NEGATIVE, SO ILLEGAL
0230	00574	040042	ADA N9	
0231	00575	002021	SSA,RSS	
0232	00576	027337R	JMP RQERR	GREATER THAN 9, SO ILLEGAL
0233	00577	064043	LDB N8	
0234	00600	002400	CLA	
0235	00601	017712R	JSB \$MOVE	
0236	00602	000226	RQP1A DEF RQP1	
0237	00603	064224	LDB RQCNT	
0238	00604	007004	CMB,INB	
0239	00605	034306	ISZ TEMP1	INCR TO ADDR OF WORD 2
0240	00606	062602R	LDA RQP1A	
0241	00607	070307	STA TEMP2	SET TEMP2 TO ADDRESS OF RQP1
0242	00610	060306	R1 LDA TEMP1	
0243	00611	160000	LDA A,I	
0244	00612	002002	SZA	ERROR IF
0245	00613	050054	CPA .1	0 OR 1
0246	00614	027337R	JMP RQERR	
0247	00615	001275	RAL,CLE,SLA,ERA	
0248	00616	026611R	JMP R1+1	GET NEXT LEVEL INDIRECT
0249	00617	170307	STA TEMP2,I	AND STORE IN REQUEST ADDR
0250	00620	034307	ISZ TEMP2	
0251	00621	034306	ISZ TEMP1	
0252	00622	006006	INB,SZB	
0253	00623	026610R	JMP R1	GO TO GET NEXT ADDRESS
0254	00624	160226	LDA RQP1,I	GET REQUEST CODE
0255	00625	002003	SZA,RSS	
0256	00626	027337R	JMP RQERR	ERROR IF ZERO
0257	00627	002021	SSA,RSS	
0258	00630	003004	CMA,INA	
0259	00631	043073R	ADA CODE#	
0260	00632	002020	SSA	
0261	00633	027337R	JMP RQERR	ERROR IF LARGER THAN # DEFI
0262	00634	003004	CMA,INA	
0263	00635	043073R	ADA CODE#	FORM POSITIVE REQUEST CODE #
0264	00636	070316	R4 STA RCODE	SAVE POSITIVE REQUEST CODE VALUE
0265	00637	043033R	ADA RQTB	REQUEST TABLE ADDRESS
0266	00640	164000	LDB A,I	GET LINK ADDRESS OF PROCESSOR
0267	00641	060316	LDA RCODE	
0268	00642	000066	CLE,ERA	
0269	00643	043074R	ADA MDTAB	
0270	00644	160000	LDA A,I	GET EXEC MODULE#
0271	00645	002041	SEZ,RSS	
0272	00646	001727	ALF,ALF	ROTATE IF NECESSARY
0273	00647	010074	AND M377	ISOLATE MODULE#
0274	00650	074305	R4A STB TEMP0	SAVE LINK ADDRESS.
0275	00651	064316	LDB RCODE	=YES,
0276	00652	027376R	JMP \$MDLD	GO LOAD EXEC MODULE

```

0277*
0278 00653 017333R R1,ST JSB RQNEG      CHECK IF NEG. REQ. CODE
0279 00654 016061R      JSB SEQAB
0280 00655 170001      STA B,I          STORE VALUE INTO BASE PAGE
0281 00656 006004      INB              INCREMENT STORE ADDRESS
0282 00657 073475R R1A STA ECODE        SAVE A REGISTER TEMPORARILY.
0283 00660 060225      LDA RQRTN        SET UP RETURN ADDR FOR SIRT
0284 00661 070137      STA XIRT
0285 00662 063475R      LDA ECODE        RESTORE A REGISTER,
0286 00663 026134R      JMP SIRT        RESTORE INTERRUPT SYS, MEM PROT
0287*                                & RETURN.
0288*
0289 00664 017333R R2X JSB RQNEG      CHECK IF NEG. REQ. CODE
0290 00665 060237      LDA XA          GET EXECUTE I/O INSTRUCTION
0291 00666 072667R      STA **1
0292 00667 000000      NOP            EXECUTE IT
0293 00670 026657R      JMP R1A        RETURN TO CALLER
0294 00671 034105 R1AX ISZ CLOCK+1     SET TO NON-ZERO
0295 00672 026657R      JMP R1A
0296 00673 017333R R2A JSB RQNEG      CHECK IF NEG. REQ. CODE
0297 00674 060103      LDA TBG        -YES
0298 00675 002003      SZA,RSS        CONTINUE IF TBG NON-ZERO
0299 00676 026671R      JMP R1AX      RETURN TO CALLER
0300 00677 032705R      IOR RTBG1
0301 00700 072705R      STA RTBG1     FORM AND STORE OTA TBG
0302 00701 042346R      ADA .1100
0303 00702 072706R      STA RTBG2     FORM AND STOTE STC TBG,C
0304 00703 072436R      STA CLTBG
0305 00704 060056      LDA .3
0306 00705 102600 RTBG1 OTA 0         OTA 3 TO TBG
0307 00706 000000 RTBG2 NOP          TURN ON TIME BASE GENERATOR
0308 00707 026657R      JMP R1A      RETURN TO CALLER
0309*
0310*
0311 00710 017333R R,LDX JSB RQNEG      CHECK IF NEG. REQ. CODE
0312 00711 060065 SLDEX LDA .10
0313 00712 066714R      LDB DEF10
0314 00713 026650R      JMP R4A
0315*
0316 00714 000012X DEF10 DEF SEX10
0317*
0318 00715 160227 STAT LDA RQP2,I
0319 00716 050052 CPA N1              JOBPR PRIV. REQ.?
0320 00717 026752R      JMP JSTAT      -YES
0321 00720 073201R      STA SAVEA     SAVE LUN FOR NULL CHECK
0322 00721 017145R      JSB LUCHK
0323 00722 017167R      JSB NULCK     IS LUN NULL?
0324 00723 026737R      JMP STAT1     YES.
0325 00724 060133      LDA MDFLG     PUT BIT 0 IN "E"
0326 00725 001500      ERA
0327 00726 060224      LDA RQCNT
0328 00727 164220      LDB EQT14,I
0329 00730 050057 CPA .4              2-WORD STATUS REQUEST?
0330 00731 174231 STB RQP4,I          -YES, SET TRANSMISSION LOG
0331 00732 160206 LDA EQT4,I
0332 00733 170230 STA RQP3,I          SET DEVICE STATUS

```

0333	00734	002040	SEZ		WAS MDPLG BIT 0 SET?
0334	00735	002400	CLA		YES- "A"=0 FOR OPERATION OK
0335	00736	026657R	JMP R1A		
0336	00737	060224	STAT1 LDA RQCNT		
0337	00740	064133	LDB MDPLG		PUT BIT 0 IN "E"
0338	00741	005500	ERB		
0339	00742	006400	CLB		SET TRANSMISSION LOG TO 0
0340	00743	050057	CPA .4		2-WORD STATUS REQUEST?
0341	00744	174231	STB RQP4,I		YES. SET TRANSMISSION LOG.
0342	00745	062471R	LDA .40		SET STATUS TO EOT
0343	00746	170230	STA RQP3,I		
0344	00747	002040	SEZ		WAS MDPLG BIT 0 SET?
0345	00750	060070	LDA M17		YES- "A"=15 FOR UNASSIGN LU
0346	00751	026657R	JMP R1A		
0347*					
0348	00752	062764R	JSTAT LDA DFWAT		
0349	00753	070242	STA XSUSP		
0350	00754	070322	STA SXSUS		
0351	00755	064240	LDB XB		
0352	00756	016124R	JSB \$TEST		GO PROCESS EQ,LU,UP,DN
0353	00757	026657R	JMP R1A		
0354*					
0355	00760	160227	RELTR LDA RQP2,I		
0356	00761	002007	INA,SZA,RSS		
0357	00762	070267	STA RTRK		
0358	00763	026657R	JMP R1A		
0359*					
0360	00764	001662R	DFWAT DEF WAITL		
0361*					
0362	00765	160227	MEMPT LDA RQP2,I		IF PARAM=0, WANT MEM PROT ON, I.E.
0363	00766	066774R	LDB CLC5		SET MPCOD TO STC 5
0364	00767	002003	SZA,RSS		IF PARAM NON=0, WANT MEM PRO OFF
0365	00770	066773R	LDB STC5		I.E. SET MPCOD TO CLC 5
0366	00771	076146R	STB MPCOD		
0367	00772	026657R	JMP R1A		RETURN TO CALLER.
0368	00773	102705	STC5 STC 5		
0369	00774	106705	CLC5 CLC 5		
0370*					
0371	00775	060136	SEGRY LDA SGRTN		IF SGRTN=0, TREAT IT AS PROGRAM
0372	00776	002003	SZA,RSS		COMPLETION.
0373	00777	027027R	JMP PGRTN		
0374	01000	070137	STA XIRT		
0375	01001	002400	CLA		
0376	01002	070136	STA SGRTN		OTHERWISE CLEAR SGRTN & TRANSFER
0377	01003	064224	LDB RQCNT		
0378	01004	054054	CPB .1		ANY PARAM PASSED?
0379	01005	026134R	JMP \$IRT		NO, RETURN
0380	01006	044052	ADB N1		YES. SET UP PRAM COUNT
0381	01007	007004	CMB,INB		
0382	01010	076473R	STB TEMPZ		
0383	01011	067026R	LDB XRQP2		AND MOVE RQP'S TO RONBF
0384	01012	063025R	LDA DFRON		(USE NULCK AS TEMP PTR)
0385	01013	073167R	STA NULCK		
0386	01014	160001	LDA B,I		
0387	01015	160000	LDA A,I		
0388	01016	173167R	STA NULCK,I		

PAGE 0023 #02 DISC OPERATING SYSTEM CORE RESIDENT PROCESSOR

0389	01017	037167R	ISZ	NULCK	
0390	01020	006004	INB		
0391	01021	036473R	ISZ	TEMPZ	
0392	01022	027014R	JMP	*-6	
0393	01023	067025R	LDB	DFRON	
0394	01024	026134R	JMP	\$IRT	
0395	01025	000126	DFRON	DEF	RONBF
0396	01026	000227	XRQP2	DEF	RQP2
0397*					
0398	01027	060056	PGRTN	LDA	.3
0399	01030	064061		LDB	.6
0400	01031	074316		STB	RCODE
0401	01032	027376R		JMP	\$MDLD
0402*					

GO TO SEX03 FOR PROG. COMPLETION
CHANGE RCODE TO PROG COMPLETION
GO LOAD EXEC MODULE.

0404	01033	001034R	RQTBL	DEF	**+1	
0405	01034	000022X	DEF18	DEF	SEX18	CODE 0 = RETURN TO SEX18 FROM SF
0406	01035	000022X		DEF	SEX18	CODE 1 = READ(WORK-IF DISC)
0407	01036	000022X		DEF	SEX18	CODE 2 = WRITE(WORK-IF DISC)
0408	01037	000022X		DEF	SEX18	CODE 3 = CONTROL
0409	01040	000010X		DEF	SEX08	CODE 4 = DISC TRACK ALLOC (RT)
0410	01041	000760R		DEF	RELTR	CODE 5 = R/T DISC TRK RELEASE
0411	01042	000003X		DEF	SEX03	CODE 6 = PROGRAM COMPLETION
0412	01043	000004X	DEF04	DEF	SEX04	CODE 7 = PROGRAM SUSPENSION
0413	01044	000005X		DEF	SEX05	CODE 8 = PROGRAM SEGMENT LOAD
0414	01045	000005X		DEF	SEX05	CODE 9 = SCHED WITH WAIT
0415	01046	000005X		DEF	SEX05	CODE 10 = SCHED WITHOUT WAIT
0416	01047	000007X		DEF	SEX07	CODE 11 = TIME REQUEST
0417	01050	001337R		DEF	RQERR	CODE 12 = TIMER REQUEST (RT)
0418	01051	000715R		DEF	STAT	CODE 13 = STATUS
0419	01052	000022X		DEF	SEX18	CODE 14 = FILE READ (DISC)
0420	01053	000022X		DEF	SEX18	CODE 15 = FILE WRITE(DISC)
0421	01054	000001X		DEF	SEX01	CODE 16 = DISC WORK TRACKS STATUS
0422	01055	000002X		DEF	SEX02	CODE 17 = DISC WORK TRACK LIMITS
0423	01056	000006X		DEF	SEX06	CODE 18 = USER FILE NAME SEARCH
0424	01057	000653R		DEF	R1,ST	CODE 19 = BASE PAGE STORE
0425	01060	000710R		DEF	R,LDX	CODE 20 = LOAD&EXECUTE PROGRAM
0426	01061	000673R		DEF	R2A	CODE 21 = TURN ON TBC
0427	01062	000664R		DEF	R2X	CODE 22 = EXECUTE I/O IN A=REG.
0428	01063	000021X	DEF17	DEF	SEX17	CODE 23 = CHANGE USER SUBCHANNEL
0429	01064	000025X	DEF30	DEF	SEX30	CODE 24 = EFMP REQUEST
0430	01065	000031X		DEF	SEX34	CODE 25
0431	01066	000032X		DEF	SEX35	CODE 26
0432	01067	000033X		DEF	SEX36	CODE 27 = USER EXEC MODULE
0433	01070	000034X		DEF	SEX37	CODE 28 = USER EXEC MODULE
0434	01071	000775R		DEF	SEGRT	CODE 29 = SEGMENT RETURN
0435	01072	000765R		DEF	MEMPT	CODE 30 = MEMPOY PROTECT
0436	01073	000036	CODE#	ABS	**+2=RQTBL	
0437*						
0438	01074	001075R	MDTAB	DEF	**+1	
0439	01075	011022		OCT	11022	18,18
0440	01076	011022		OCT	11022	18,18
0441	01077	004377		OCT	4377	8,-1
0442	01100	001404		OCT	1404	3,4
0443	01101	002405		OCT	2405	5,5
0444	01102	002407		OCT	2407	5,7
0445	01103	177777		OCT	177777	-1,-1
0446	01104	011022		OCT	11022	18,18
0447	01105	000402		OCT	402	1,2
0448	01106	003377		OCT	3377	6,-1
0449	01107	177777		OCT	177777	-1,-1
0450	01110	177421		OCT	177421	-1,17
0451	01111	017042		OCT	17042	30,34
0452	01112	021444		OCT	21444	35,36
0453	01113	022777		OCT	22777	37,-1
0454	01114	177400		OCT	177400	-1,0
0455*						

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0457*
0458*   THE FOLLOWING CODE IS PART OF THE I/O CONTROL PROCESSING
0459*   MODULE($EX18). IT IS REMOVED FROM THE EXEC MODULE BECAUSE
0460*   IT REQUIRES THE EXEC MODULE OVERLAY AREA TO DO A FILE
0461*   SEARCH($EX06)
0462*
0463 01116 060232 IO.40 LDA RQP5      CHECK IF LEGAL USER FILE NAME
0464 01116 070274      STA SMDBF      SAVE ADDRESS OF FILE NAME
0465 01117 067142R      LDB FLDEF
0466 01120 074275      STB SMDBF+1    SET RETURN ADDRESS
0467 01121 063144R      LDA .11
0468 01122 067143R      LDB DEF11
0469 01123 026650R      JMP R4A      READ IN $EX11
0470 01124 006003 IO.FL SZB,RSS
0471 01125 027352R      JMP ERR06      FILE NAME NOT FOUND
0472 01126 044055      ADB .2
0473 01127 160001      LDA B,I
0474 01130 010071      AND M37
0475 01131 052624R      CPA .12      TYPE IS ABSOLUTE?
0476 01132 002400      CLA          -YES.
0477 01133 040041      ADA N10      ASCII, BINARY +; OTHERS -
0478 01134 001000      ALS
0479 01135 030316      IOR RCODE      14=READ, 15=WRITE
0480 01136 002031      SSA,SLA,RSS    ERROR IF WRITE NOT ASCII OR BIN.
0481 01137 002401 IO.41 CLA,RSS      OK. SET TO RETURN TO $EX18
0482 01140 027341R      JMP ERRTN      OPERATION REJECTED
0483 01141 026636R      JMP R4
0484 01142 001124R FLDEF DEF IO.FL
0485 01143 000013X DEF11 DEF $EX11
0486 01144 000013 .11 DEC 11
0487*

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0489*
0490*      LOGICAL UNIT # CHECK ROUTINE
0491*
0492*      LUCHK VARIFY THAT LU # SPECIFIED IS LEGAL I/O DEVICE.
0493*      IN ADDITION, IF LEGAL, THEN THE 17 WORD EQT TABLE ADDRESSES
0494*      ARE SET BEFORE RETURNING.
0495*
0496*      CALLING SEQUENCE:
0497*
0498*          LDA <L,U. #>
0499*          JSB LUCHK
0500*
0501 01145 000000 LUCHK NOP
0502 01146 010072      AND M77
0503 01147 002003      SZA,RSS
0504 01150 026535R      JMP ERR01
0505 01151 007400      CCB
0506 01152 044000      ADB A
0507 01153 003004      CMA,INA
0508 01154 040122      ADA LUT#
0509 01155 002020      SSA
0510 01156 026535R      JMP ERR01      EXCEEDS L,U. TABLE LENGTH
0511 01157 044121      ADB LUTAB
0512 01160 160001      LDA B,I
0513 01161 002003      SZA,RSS
0514 01162 127145R      JMP LUCHK,I      LU NULL. RETURN
0515 01163 040052      ADA N1      CONVERT L,U. TO ABSOLUTE ADDRESS
0516 01164 016605R      JSB MPY17      MULTIPLY BY 17
0517 01165 017704R      JSB SETEQ
0518 01166 127145R      JMP LUCHK,I
0519*
0520 01167 000000 NULCK NOP      SUBROUTINE TO CHECK IF LUN IS NUL
0521 01170 063201R      LDA SAVEA      GET SAVED LUN
0522 01171 010072      AND M77      MASK OUT LUN ONLY
0523 01172 040052      ADA N1
0524 01173 040121      ADA LUTAB      POINT TO LUTAB ENTRY
0525 01174 160000      LDA A,I      GET EQT ENTRY
0526 01175 002003      SZA,RSS      NULL?
0527 01176 127167R      JMP NULCK,I      YES. RETURN TO P+1
0528 01177 037167R      ISZ NULCK      NO. RETURN TO P+2
0529 01200 127167R      JMP NULCK,I
0530 01201 000000 SAVEA NOP
0531*
0532***** I/O DRIVER INITIATION PROCESSOR *****
0533*
0534*      THIS ROUTINE PROVIDES A CENTRAL POINT FOR CALLING AN I/O
0535*      DRIVER TO INITIATE A NEW OPERATION,
0536*      THIS ROUTINE ASSIGNS A DMA CHANNEL, IF REQUIRED.
0537*      THE ADDRESSES OF THE EQUIPMENT TABLE ENTRY MUST BE SET IN
0538*      EQT1-EQT17 BEFORE THE ROUTINE IS CALLED.
0539*
0540*      CALLING SEQUENCE:
0541*          JSB DRVR
0542*
0543*      RETURN:
0544*          (P+1) FOR OPERATION INITIATED

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0545*      (P+2) FOR OPERATION REJECTED
0546*      (A) = 1 FOR READ OR WRITE ILLEGAL FOR DEVICE
0547*      = 2 FOR CONTROL REQUEST ILLEGAL FOR DEVICE
0548*      = 3 FOR EQUIPMENT MALFUNCTION OR NOT READY
0549*      = 4 FOR IMMEDIATE COMPLETION
0550*      = 5 FOR DMA UNAVAILABLE
0551*      = 6 FOR DRIVER REQUIRE WAIT
0552*
0553 01202 000000  DRVR NOP
0554 01203 160205  LDA EQT3,I  CHECK IF DMA REQUIRED
0555 01204 002021  SSA,RSS      YES
0556 01205 027230R JMP DVR02
0557*
0558 01206 160212  LDA EQT8,I  *
0559 01207 002020  SSA      * IF CLEAR DEVICE REQUEST,
0560 01210 003004  CMA,INA    *
0561 01211 050056  CPA ,3     * I.E., REQUEST CODE #3,
0562 01212 002001  RSS      *
0563 01213 027220R JMP DVR00    * & CONTROL FUNCTION = 0,
0564 01214 160213  LDA EQT9,I  *
0565 01215 013311R AND MSKCL   * THEN DON'T ASSIGN DMA.
0566 01216 002003  SZA,RSS    *
0567 01217 027230R JMP DVR02    *
0568*
0569 01220 060061  DVR00 LDA ,6    CHECK TO ASSIGN DMA CHANNEL
0570 01221 070257  STA CHAN
0571 01222 017317R JSB $DMAX    CHECK FOR DMA CHANNEL ASSIGNMENT
0572 01223 027226R JMP DVR01
0573 01224 027265R JMP DVR07
0574 01225 034257  ISZ CHAN
0575 01226 060203  DVR01 LDA EQT1    SET EQT ENTRY ADDRESSES IN
0576 01227 170001  STA B,I      INTERRUPT TABLE ENTRY
0577 01230 160213  DVR02 LDA EQT9,I
0578 01231 010077  AND M1777
0579 01232 070001  STA B
0580 01233 160212  LDA EQT8,I    GET REQUEST CODE
0581 01234 002020  SSA
0582 01235 003004  CMA,INA
0583 01236 052625R CPA ,14    USER FILE READ REQUEST
0584 01237 002404  CLA,INA
0585 01240 050070  CPA ,15    USER FILE WRITE REQUEST
0586 01241 060055  LDA ,2
0587 01242 030001  IOR B
0588 01243 170213  STA EQT9,I
0589 01244 160205  LDA EQT3,I    LOAD A WITH CHANNEL#
0590 01245 010072  AND M77
0591 01246 164203  LDB EQT1,I    CALL DRIVER INITIATION SECTION
0592 01247 114001  JSB B,I
0593*
0594* DRIVER RETURNS AN INDICATION OF ACCEPTANCE OR REJECTION OF THE
0595* REQUESTED OPERATION.
0596* (A) = 0 FOR OPERATION SUCCESSFULLY INITIATED.
0597* = 1 FOR READ OR WRITE REQUEST ILLEGAL FOR DEVICE
0598* = 2 FOR CONTROL REQUEST ILLEGAL OR NOT DEFINED
0599* = 3 FOR EQUIPMENT MALFUNCTION OR NOT READY
0600* = 4 FOR IMMEDIATE COMPLETION

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0601*      = 5 FOR WAITING FOR DMA
0602*      = 6 FOR DRIVER REQUIRE A WAIT
0603*
0604 01250 072473R STA TEMPZ SAVE INIT. CODE
0605 01251 002102 CLE,SZA
0606 01252 027267R JMP DVR06 OPERATION REJECTED
0607 01253 164205 LDB EQT3,I
0608 01254 005222 RBL,RBL
0609 01255 060203 LDA EQT1
0610 01256 003004 CMA,INA
0611 01257 006311 CCE,SLB,RSS
0612 01260 070315 STA IODMD
0613 01261 160206 LDA EQT4,I SET AV FIELD OF EQT4 TO 2 TO
0614 01262 001225 RAL,ERA INDICATE DEVICE IN
0615 01263 170206 STA EQT4,I OPERATION
0616 01264 127202R JMP DRIVR,I
0617 01265 060060 DVR07 LDA .5
0618 01266 027307R JMP DVR09
0619 01267 050056 DVR06 CPA .3 NOT READY?
0620 01270 002300 CCE -YES
0621 01271 017671R JSB RCHAN RELEASE DMA CHANNEL
0622 01272 060133 LDA MDFLG BIT 0 OF MDFLG=1?
0623 01273 000010 SLA
0624 01274 027277R JMP DVR08 YES- SKIP NRPAR
0625 01275 006440 CLB,SEZ NOT READY?
0626 01276 017312R JSB NRPAR -YES
0627 01277 062473R DVR08 LDA TEMPZ
0628 01300 050057 CPA .4 IMMED. COMPLETION?
0629 01301 002101 CLE,RSS YES, CLEAR BUSY BIT,
0630 01302 027307R JMP DVR09 NO.
0631 01303 160206 LDA EQT4,I
0632 01304 001225 RAL,ERA
0633 01305 170206 STA EQT4,I
0634 01306 062473R LDA TEMPZ
0635 01307 037202R DVR09 ISZ DRIVR
0636 01310 127202R JMP DRIVR,I RETURN TO (P+2) EXIT
0637*
0638 01311 017700 MSKCL OCT 17700 MASK OUT FUNCTION CODE
0639 01312 000000 NRPAR NOP CHECK IF EX11 OR 17 ACTIVE
0640 01313 060330 LDA XFLG SET WITH ADDRESS IF TRUE
0641 01314 002003 SZA,RSS
0642 01315 127312R JMP NRPAR,I NO
0643 01316 124000 JMP A,I YES

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0645*
0646*      THIS ROUTINE CHECKS FOR AN AVAILABLE DMA CHANNEL AND S
0647*      UP VIA ITS EXIT FOR THE ASSIGNMENT OF THE OF THE DMA
0648*
0649*
0650*      P+1 RETURN: DMA #6 AVAILABLE
0651*      P+2 RETURN: (A) DMA #6 AND #7 BUSY
0652*                  (B) DMA #6 BUSY AND #7 NOT IN 2114B
0653*      P+3 RETURN: DMA #7 AVAILABLE
0654*
0655 01317 000000 $DMAX NOP      CHECK DMA CHAN ASSIGNMENTS
0656 01320 064201      LDB INTAB
0657 01321 002400      CLA
0658 01322 150001      CPA B,I
0659 01323 127317R     JMP $DMAX,I
0660 01324 050165      CPA CUMID      CHECK IF 2116
0661 01325 006004      INB      CHECK FOR 2ND CHAN IF AVAIL
0662 01326 150001      CPA B,I
0663 01327 037317R     ISZ $DMAX      CHAN IS AVAIL
0664 01330 037317R     ISZ $DMAX
0665 01331 127317R     JMP $DMAX,I
0666*
0667 01332 000015X DEF13 DEF $EX13
0668*
0669*
0670*      THE FOLLOWING ARE ENTRIES FOR SYSTEM DETECTED ERRORS..
0671*      THE NECESSARY INFORMATION NEEDED FOR THE ERROR CODE ARE SET
0672*      PRIOR TO CALLING THE ERROR PROCESSING ROUTINE.
0673*
0674 01333 000000 RQNEG NOP
0675 01334 164226      LDB RQP1,I
0676 01335 006020      SSB      REQUEST CODE NEGATIVE?
0677 01336 127333R     JMP RQNEG,I      -YES, SO OK
0678*
0679 01337 064055 RQERR LDB .2      REQUEST ERROR
0680 01340 027353R     JMP MD13
0681 01337      $RQER EQU RQERR
0682 01341 006401 ERRTN CLB,RSS
0683 01342 064061 ERR02 LDB .6      LOGICAL UNIT NOT ASSIGNED
0684 01343 027353R     JMP MD13
0685 01344 064062 ERR03 LDB .7      ILLEGAL BUFFER ADDRESS
0686 01345 027353R     JMP MD13
0687 01346 064063 ERR04 LDB .8      CORE WRAP AROUND
0688 01347 027353R     JMP MD13
0689 01350 064064 ERR05 LDB .9      ILLEGAL TRACK ADDRESS
0690 01351 027353R     JMP MD13
0691 01352 064065 ERR06 LDB .10     FILE NAME NOT FOUND
0692 01353 060314 MD13 LDA VADR
0693 01354 070274      STA $M0BF
0694*
0695* IF BIT 0 OF MDFLG SET, RETURN TO USER WITH
0696* PROPER ERROR CODE SET IN REG A. OTHERWISE GO TO EX13
0697*
0698 01355 060133      LDA MDFLG      BIT 0
0699 01356 002011      SLA,RSS      OF MDFLG = 1?
0700 01357 027367R     JMP MD13B     NO. OK.

```

0701	01360	054054	CPB .1	MEMORY PROTECT ERROR?
0702	01361	002001	RSS	YES, IGNORE MODE FLAG
0703	01362	054056	CPB .3	TIME EXCEEDED?
0704	01363	027367R	JMP MD13B	YES, IGNORE MODE FLAG
0705	01364	044064	ADB .9	ADJUST ERROR CODE
0706	01365	060001	LDA B	SET A TO ERROR CODE
0707	01366	026657R	JMP R1A	RETURN TO USER.
0708*				
0709	01367	063332R	MD13B LDA DEF13	
0710	01370	070305	STA TEMP0	
0711	01371	002400	CLA	
0712	01372	054057	CPB .4	I/O ERROR?
0713	01373	002001	RSS	-YES, DON'T ZAP EXMOD
0714	01374	070245	STA EXMOD	-ZAP!
0715	01375	063743R	LDA .13	
0716*				
0717*	NOTE - THIS CODING MUST FALL THRU TO SMDLO			
0718*				

```

0720*
0721***** MODULE LOADING ROUTINE *****
0722*
0723*   THIS ROUTINE IS USED BY EXEC WHEN AN EXEC MODULE IS REQUESTED
0724*
0725*   THE MODULE MAY BE CORE RESIDENT OR DISC RESIDENT:
0726*
0727*       1. IF CORE RESIDENT, THEN ENTER MODULE AT TRANSFER ADDRESS
0728*
0729*       2. IF DISC RESIDENT,
0730*
0731*           A. CURRENT RESIDENCE WORD:
0732*               0 FOR NONE RESIDENT
0733*               +N FOR MODULE N RESIDENT AND NOT BUSY
0734*               -N FOR MODULE N RESIDENT AND BUSY
0735*           B. IF CURRENT RES WORD IS +N, THEN IF N IS THE DESIRED
0736*               MODULE, ENTER AT TRANSFER ADDRESS. IF N IS NOT THE
0737*               DESIRED MODULE, READ MODULE IN AND ENTER AT FIRST
0738*               LOCATION OF MODULE AREA
0739*           C. IF CURRENT RESIDENCE WORD IS -N, THEN GO TO MODULE
0740*               WAIT ROUTINE (SEBSY)
0741*
0742*   CALLING SEQUENCE:
0743*
0744*       LDA <TRANSFER ADDRESS>
0745*       STA TEMP0
0746*       LDA <MODULE #>
0747*       LDB <INFORMATION NEEDED BY MODULE>
0748*       JMP SMDLD
0749*
0750 01376 072477R SMDLD STA TEMP+5   MODULE #
0751 01377 076476R      STB TEMP+4
0752 01400 060243      LDA EXLOC
0753 01401 072475R      STA TEMP+3   LOCATION OF DOUBLETS
0754 01402 060244      LDA EX#
0755 01403 002003      SZA,RSS
0756 01404 027417R      JMP MDCOR
0757 01405 003004      CMA,INA
0758 01406 072474R      STA TEMP+2   DOUBLET COUNTER
0759 01407 162475R MD1  LDA TEMP+3,I  SEARCH DOUBLET TABLE FOR MODULE
0760 01410 010074      AND M377
0761 01411 052477R      CPA TEMP+5
0762 01412 027427R      JMP MD2      MODULE FOUND
0763 01413 036475R      ISZ TEMP+3
0764 01414 036475R      ISZ TEMP+3
0765 01415 036474R      ISZ TEMP+2
0766 01416 027407R      JMP MD1      GO TEST NEXT DOUBLET
0767 01417 060305 MDCOR LDA TEMP0     GET MODULE ADDRESS
0768 01420 002001      RSS
0769 01421 160000      LDA A,I
0770 01422 001275      RAL,CLE,SLA,ERA
0771 01423 027421R      JMP *-2
0772 01424 002003      SZA,RSS      ANYTHING THERE?
0773 01425 027337R      JMP RQERR    -NO, GIVE REQUEST ERROR
0774 01426 124305      JMP TEMP0,I   YES, TRANSFER TO MODULE
0775 01427 064245 MD2  LDB EXMOD     CHECK IF EXEC OVERLAY BUSY

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0776	01430	006020	SSB	
0777	01431	027470R	JMP CHEKE	YES, CHECK MDFLG
0778	01432	003004	CMA, INA	
0779	01433	070245	STA EXMOD	SET OVERLAY AREA BUSY
0780	01434	056477R	CPB TEMP+5	
0781	01435	027466R	JMP MDY	
0782	01436	064246	LDB EXMAN	SETUP TO READ IN MODULE MAIN
0783	01437	074167	STB DBUFR+1	SET CORE ADDRESS
0784	01440	007004	CMB, INB	
0785	01441	044247	ADB EXMAN+1	SAVE OVERLAY SIZE
0786	01442	074170	STB DBUFR+2	AS TENTATIVE WORD COUNT
0787	01443	162475R	LDA TEMP+3, I	#SECTOR MAIN IN UPPER 5 BITS
0788	01444	010075	AND M1774	ISOLATE
0789	01445	001727	ALF, ALF	AND CONVERT
0790	01446	001700	ALF	TO #WORDS
0791	01447	007004	CMB, INB	
0792	01450	044000	ADB A	
0793	01451	006020	SSB	#WORDS > OVERLAY AREA SIZE?
0794	01452	070170	STA DBUFR+2	-NO, SET #WORDS FROM DBLT TABLE
0795	01453	036475R	ISZ TEMP+3	
0796	01454	162475R	LDA TEMP+3, I	MAIN START TRACK/SECTOR
0797	01455	017501R	JSB DISCX	CALL TO READ THE DISC
0798	01456	064250	LDB EXBAS	
0799	01457	074167	STB DBUFR+1	SET CORE ADDRESS
0800	01460	007004	CMB, INB	
0801	01461	044251	ADB EXBAS+1	
0802	01462	074170	STB DBUFR+2	SET NUMBER OF WORDS
0803*				
0804	01463	054054	CPB .1	SKIP READING OF BASE PAGE LINKS
0805	01464	002001	RSS	IF ONLY ONE EXEC MOD LINK
0806*				
0807	01465	017501R	JSB DISCX	READ IN B.P. LINKS
0808	01466	066476R	LDB TEMP+4	
0809	01467	124246	JMP EXMAN, I	TRANSFER TO MODULE
0810*				
0811	01470	064133	CHEKE LDB MDFLG	
0812	01471	006011	SLB, RSS	BIT 0 = 1?
0813	01472	027567R	JMP \$EBSY	NO, GO WAIT
0814	01473	060063	LDA .8	YES, SET CODE TO EXEC MOD AREA BUSY
0815	01474	026657R	JMP R1A	RETURN TO USER.
0816*				
0817	01475	000000	ECODE NOP	
0818	01476	000000	SUBAD NOP	
0819	01477	040000	MASK8 OCT 40000	
0820	01500	000031	B31 OCT 31	
0821	01501	000000	DISCX NOP	
0822	01502	070166	STA DBUFR	
0823	01503	002400	CLA	
0824	01504	070162	STA CRFLG	
0825	01505	060174	LDA TSONE	SAVE POSSIBLE USER
0826	01506	073520R	STA SVTSN	NEXT TRACK/SECTOR
0001	01507	063517R	LDA DBFR	PARAMETER ADDRESS FOR SYSTEM
0002	01510	006404	CLB, INB	B = -1 = SYSTEM READ
0003	01511	017731R	JSB \$DISC	READ THE DISC
0004	01512	060174	LDA TSONE	SET UP POSSIBLE
0005	01513	070166	STA DBUFR	NEXT ACCESS

0006	01514	067520R	LDB SVTSN	RESTORE POSSIBLE USER
0007	01515	074174	STB TSONE	NEXT TRACK/SECTOR
0008	01516	127501R	JMP DISCX,I	RETURN
0009	01517	000166	DBFR DEF DBUFR	
0010	01520	000000	SVTSN NOP	
0011*				
0012*				
0013****	<SLDVR> ROUTINE LOADS IN THE REQUESTED I/O DRIVER MODULE ****			
0014*				
0015*	THIS ROUTINE READS IN THE REQUESTED I/O DRIVER MODULE INTO			
0016*	CORE.			
0017*				
0018*	CALLING SEQUENCE:			
0019*				
0020*	SET DRIVER EGT ADDRESSES IN BASE PAGE			
0021*	JSB SLDVR			
0022*				
0023	01521	000000	SLDVR NOP	
0024	01522	164205	LDB EGT3,I	
0025	01523	005222	RBL,RBL	
0026	01524	004010	SLB	CORE-RESIDENT DRIVER?
0027	01525	127521R	JMP SLDVR,I	YES, EXIT
0028	01526	060315	LDA IODMD	GET CURRENT DRIVER EGT1 ADDRS.
0029	01527	040056	ADA .3	-INCR. TO EGT4 ADDRS.
0030	01530	160000	LDA A,I	
0031	01531	120206	XOR EGT4,I	ZAP WITH REQ. EGT4
0032	01532	012502R	AND ETYPE	ISOLATE EGPMT, TYPE CODE
0033	01533	002003	SZA,RSS	DRIVER ALREADY IN CORE?
0034	01534	127521R	JMP SLDVR,I	-YES
0035*				
0036	01535	063521R	LDA SLDVR	
0037	01536	073561R	STA LDRTN	SAVE RETURN ADDRS.
0038	01537	060203	LDA EGT1	
0039	01540	070315	STA IODMD	SAVE I/O DRIVER MOD EGT ADDR
0040	01541	064252	LDB IODMN	
0041	01542	074167	STB DBUFR+1	STORE START ADDRESS OF MAIN
0042	01543	007004	CMB,INB	
0043	01544	144221	ADB EGT15,I	
0044	01545	074170	STB DBUFR+2	STORE NUMBER OF WORDS OF MAIN
0045	01546	160223	LDA EGT17,I	
0046	01547	017501R	JSB DISCX	LOAD DRIVER
0047	01550	064253	LDB IODBS	
0048	01551	074167	STB DBUFR+1	STARTING B.P. CORE ADDRESS
0049	01552	007004	CMB,INB	
0050	01553	144222	ADB EGT16,I	
0051	01554	074170	STB DBUFR+2	SET B.P. LINK WORD COUNT
0052*				
0053	01555	054055	CPB .2	SKIP READING OF BASE PAGE LINKS
0054	01556	002001	RSS	IF ONLY TWO DRIVER LINKS
0055*				
0056	01557	017501R	JSB DISCX	
0057	01560	127561R	JMP LDRTN,I	RETURN
0058*				
0059	01561	000000	LDRTN NOP	

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0061*
0062***** I/O DRIVER MODULE BUSY WAIT LOOP *****
0063*
0064*      EQT1-EQT17 SET PRIOR TO ENTRY
0065*
0066*      CALLING SEQUENCE:
0067*
0068*      JMP $MBSY
0069*
0070 01562 000000 $MBSY NOP
0071 01563 060203 LDA EQT1
0072 01564 073566R STA MEQT
0073 01565 027641R JMP $WAIT
0074 01566 000000 MEQT NOP
0075*
0076*      $SEBSY ROUTINE WAITS FOR EXEC MODULE AREA TO BECOME AVAILABLE
0077*
0078*
0079*      CALLING SEQUENCE:
0080*
0081*      JMP $SEBSY
0082*
0083 01567 073601R $SEBSY STA MDLDA MODULE#
0084 01570 062476R LDA TEMP+4
0085 01571 073602R STA MDLDB
0086 01572 060305 LDA TEMP0
0087 01573 073603R STA MDLDT TRANSFER ADDRESS
0088 01574 060274 LDA $MDBF INFO TO MODULE
0089 01575 073604R STA MDLD1
0090 01576 060275 LDA $MDBF+1
0091 01577 073605R STA MDLD2
0092 01600 027641R JMP $WAIT
0093 01601 000000 MDLDA NOP
0094 01602 000000 MDLDB NOP
0095 01603 000000 MDLDT NOP
0096 01604 000000 MDLD1 NOP
0097 01605 000000 MDLD2 NOP
0098 01601 ERETN EQU MDLDA
0099*
0100***** ROUTINE TO WAIT FOR I/O REQUEST COMPLETION *****
0101*
0102*      $WAIT ROUTINE PROVIDES CENTRAL POINT FOR SYSTEM IDLING AND
0103*      WAITING FOR I/O COMPLETION.
0104*      $WAIT ALSO ACTS AS CHECKING POINT FOR DEVICE BUSY, I/O MODULE
0105*      AREA BUSY, DMA AVAILABILITY AND EXEC MODULE AREA BUSY.
0106*
0107*      CALLING SEQUENCE:
0108*
0109*      JMP $WAIT
0110*
0111 01606 000000 WAITX NOP
0112 01607 066544R LDB IOCNT
0113 01610 162502R LDA DBUSY,I ISOLATE AVAILABILITY BITS
0114 01611 001222 RAL,RAL
0115 01612 010056 AND .3
0116 01613 006002 SZB

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0117	01614	002002		SZA	
0118	01615	027620R		JMP WA10	STILL BUSY
0119	01616	072544R		STA IOCNT	
0120	01617	126503R		JMP CALAD,I	
0121*					
0122	01620	063566R	WA10	LDA MEQT	CHECK I/O DRIVER MODULE BUSY
0123	01621	064315		LDB IODMD	
0124	01622	002002		SZA	
0125	01623	006020		SSB	CHECK IF MODULE AREA FREE
0126	01624	027630R		JMP WA20	NO
0127	01625	017704R		JSB SETEQ	RESTORE ORIGINAL EQT ADDRESSES
0128	01626	073566R		STA MEQT	CLEAR WAITING FLAG
0129	01627	127562R		JMP SMBSY,I	TRANSFER TO ORIGINAL PT OF CALL
0130*					
0131	01630	017317R	WA20	JSB \$DMAX	CHECK IF DMA AVAIL.
0132	01631	027633R		JMP WA30	CHANNEL 7 FREE
0133	01632	127606R		JMP WAITX,I	NEITHER CHANNEL FREE
0134	01633	062560R	WA30	LDA DEQT	
0135	01634	002003		SZA,RSS	WAITING FOR DMA?
0136	01635	127606R		JMP WAITX,I	NO
0137	01636	017704R		JSB SETEQ	
0138	01637	072560R		STA DEQT	CLEAR DMA WAITING FLAG
0139	01640	126501R		JMP DMAAD,I	
0140*					
0141*					
0142	01641	017606R	\$WAIT	JSB WAITX	CHECK IF ANYTHING QUEUED UP
0143	01642	064245		LDB EXMOD	
0144	01643	006021		SSB,RSS	MODULE AREA AVAILABLE?
0145	01644	053601R		CPA ERETN	ANYBODY WAITING FOR IT?
0146	01645	027661R		JMP SKIP5	NO
0147	01646	063604R		LDA MDLD1	
0148	01647	070274		STA \$MDBF	
0149	01650	063605R		LDA MDLD2	
0150	01651	070275		STA \$MDBF+1	
0151	01652	063603R		LDA MDLDT	
0152	01653	070305		STA TEMP0	
0153	01654	063601R		LDA MDLDA	
0154	01655	006400		CLB	
0155	01656	077601R		STB ERETN	CLEAR MODULE WAITING FLAG
0156	01657	067602R		LDB MDLDB	
0157	01660	027376R		JMP \$MDLD	
0158*					
0159	01661	016150R	SKIP5	JSB \$IRT1	
0160	01662	102100	WAITL	STF 0	TURN ON INTERRUPT SYSTEM
0161	01663	060134		LDA DISP	
0162	01664	002002		SZA	
0163	01665	114134		JSB DISP,I	
0164	01666	003400		CCA	
0165	01667	007400		CCB	
0166	01670	027662R		JMP WAITL	
0167*					
0168*****	DMA CHANNEL ASSIGNMENT RELEASE *****				
0169*					
0170*	<RCHAN> RELEASES THE ASSIGNMENT OF A DMA CHANNEL FROM AN I/O				
0171*	DEVICE. THE I/O DEVICE IS REFERENCED BY THE EQT ENTRY ADDRESSES.				
0172*	IN EQT1-EQT17				

0173* THE CHANNEL IS RELEASED BY SETTING THE INTERRUPT TABLE ENTRY
 0174* FOR THE CHANNEL = 0

0175*

0176* CALLING SEQUENCE:

0177*

0178* JSB RCHAN

0179*

0180	01671	000000	RCHAN	NOP	ENTRY/EXIT
0181	01672	064201		LDB INTAB	
0182	01673	060203		LDA EQT1	CHECK IF CHANNEL 6 OR 7
0183	01674	150001		CPA B,I	
0184	01675	027700R		JMP RC	CHANNEL 6
0185	01676	006004		INB	
0186	01677	150001		CPA B,I	
0187	01700	002401	RC	CLA,RSS	CHANNEL 7
0188	01701	127671R		JMP RCHAN,I	NOT ASSIGNED-30 RETURN
0189	01702	170001		STA B,I	CLEAR INTERRUPT TABLE ENTRY
0190	01703	127671R		JMP RCHAN,I	RETURN-DMA RELEASED

0191*

0192*

0193*

0194**** SETEQ SETS ADDRESSES OF 17 WORD EQT ENTRY IN BASE PAGE AREA
 0195* COMMUNICATION AREA LABELED <EQT1-EQT17>

0196*

0197* CALLING SEQUENCE

0198*

0199* (A) - STARTING ADDRESS OF THE EQT ENTRY
 0200* FOR THE REFERENCED I/O UNIT

0201*

0202* JSB SETEQ

0203*

0203	01704	000000	SETEQ	NOP	ENTRY/EXIT
0204	01705	067711R		LDB DEFE1	SET STORE ADDRESS
0205	01706	016035X		JSB SSETP	
0206	01707	000066		DEF .17	# POINTERSTO SET
0207	01710	127704R		JMP SETEQ,I	
0208	01711	000203	DEFE1	DEF EQT1	

0209*

0210*

0211*

0212* \$MOVE TRANSFERS DATA FROM 1 BUFFER TO ANOTHER
 0213* OR CLEARS A SPECIFIED BUFFER

0214*

0215* CALLING SEQUENCE
 LDA <ADDR OF ORIG DATA><OR 0 FOR CLEAR>

0216*

0217*

0218*

0219*

0220	01712	000000	\$MOVE	NOP	
0221	01713	073671R		STA TMPX0	ORIG DATA ADDR
0222	01714	077317R		STB TMPX2	NEGATIVE WORD COUNT
0223	01715	167712R		LDB \$MOVE,I	
0224	01716	077704R		STB TMPX1	TRANSFER ADDR
0225	01717	037712R		ISZ \$MOVE	INCR TO EXIT ADDR
0226	01720	006400	M010	CLB	
0227	01721	002002		SZA	SKIP IF CLEAR BUFFER OPTION
0228	01722	167671R		LDB TMPX0,I	TRANSFER 1 DATA VALUE

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0229 01723 177704R      STB TMPX1,I
0230 01724 037671R      ISZ TMPX0
0231 01725 037704R      ISZ TMPX1
0232 01726 037317R      ISZ TMPX2
0233 01727 027720R      JMP M010      GO TO TRANSFER NEXT DATA
0234 01730 127712R      JMP SMOVE,I    RETURN
0235*
0236*      $DISC ROUTINE GENERATES THE NECESSARY NUMBER OF $SYIO CALLS
0237*      TO READ OR WRITE DISC DATA. ROUTINE WAITS TILL TRANSFER IS
0238*      COMPLETE
0239*
0240*      CALLING SEQUENCE
0241*      LDB 1 FOR READ; 2 FOR WRITE
0242*      LDA <PARAM BUF ADDR>
0243*      JSB $DISC
0244*
0245 01731 000000 $DISC NOP
0246 01732 077740R      STB CSY10+1    STORE READ OR WRITE REQUEST CODE
0247 01733 064203      LDB EQT1
0248 01734 077764R      STB DEGT1
0249 01735 073742R      STA CSY10+3
0250 01736 036505R      ISZ $OPER
0251 01737 016506R CSY10 JSB $SYIO      CALL TO SYSTEM I/O ROUTINE
0252 01740 000000      DEC 0          READ OR WRITE
0253 01741 000002      DEC 2          LOGICAL UNIT
0254 01742 001742R      DEF *          BUFFER ADDRESS
0255 01743 000015 .13 DEC 13          (IGNORED FOR DISC TRANSFER)
0256 01744 001760R      DEF DCOMP      COMPLETION RETURN ADDR
0257 01745 060164      LDA FILRW      FILE SEARCH W/O WAIT IN PROCESS
0258 01746 002003      SZA,RSS
0259 01747 027641R      JMP $WAIT      - NO. GO WAIT
0260 01750 002021      SSA,RSS      -YES. 1ST TIME CALL TO $DISC?
0261 01751 026046R      JMP CIC,3      -NO. RETURN TO SUSP
0262 01752 001665      ELA,CLE,ERA      -YES. CLEAR 1ST TIME BIT
0263 01753 070164      STA FILRW
0264 01754 002400      CLA      -YES. RETURN TO USER WITH
0265 01755 064225      LDB RQRTN      INIT. CODE = 0 IN A-REG
0266 01756 074137      STB XIRT
0267 01757 026134R      JMP $IRT
0268 01760 063764R DCOMP LDA DEQT1
0269 01761 017704R      JSB SETEQ
0270 01762 072505R      STA $OPER
0271 01763 127731R      JMP $DISC,I    RETURN
0272*
0273 01764 000000 DEQT1 NOP
0274*
0275*
0276 01765 064242 TE110 LDB XSUSP
0277 01766 074272      STB $GOPT      SAVE SUSPENSION ADDRESS
0278 01767 062316R      LDA CODE+2
0279 01770 070273      STA $IDCD      SET TO LOOK FOR 'GO'
0280 01771 072506R      STA SVEQT
0281*
0282*      NOTE - THIS CODING MUST FALL THROUGH TO STYPE
0283*

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0285*
0286*      STYPE IS USED TO REQUEST INPUT FROM SYSTEM TELETYPE
0287*
0288*      ENTER WITH B = 0 TO RETURN TO PT OF SUSPENSION
0289*
0290*      ENTER WITH B NOT 0 TO WAIT TILL INPUT IN
0291*
0292 01772 076114R STYPE STB IFLAG      SAVE TYPE FLAG
0293 01773 062113R      LDA ASTRK
0294 01774 006002      SZB
0295 01775 062112R      LDA ATT
0296 01776 072111R      STA ASTAT+1
0297 01777 016115R TY002 JSB SAVES      SAVE INTERRUPT VALUES
0298 02000 034261      ISZ OPFLG      INCR SYS TTY BUSY FLAG
0299 02001 016506R      JSB $SYIO
0300 02002 000002      DEC 2          OUTPUT CR/LF+
0301 02003 000001      DEC 1
0302 02004 002110R      DEF ASTAT
0303 02005 000002      DEC 2
0304 02006 002026R      DEF TY015      COMPLETION RETURN ADDRESS
0305 02007 062114R TY005 LDA IFLAG      CHECK TYPE FLAG
0306 02010 002002      SZA          TRY TO RETURN
0307 02011 027641R      JMP SWAIT      WAIT TILL DONE
0308 02012 060322 TY010 LDA SXSUS      CHECK IF RETURN TO USER OR SYS
0309 02013 016101R      JSB ADCHK
0310 02014 027641R      JMP SWAIT      SYS, SO GO TO WAIT LOOP
0311 02015 060321 TY012 LDA SXEO
0312 02016 103101      CLO          RESTORE A, B, E, AND 0 REGISTER
0313 02017 000036      SLA,ELA
0314 02020 102101      STF 1
0315 02021 060322      LDA SXSUS      SET UP RETURN ADDR FOR SIRT
0316 02022 070137      STA XIRT
0317 02023 060317      LDA SXA
0318 02024 064320      LDB SXB
0319 02025 026134R      JMP SIRT      RESTORE INTERRUPT SYS, MEM PROT
0320*      & RETURN.
0321 02026 016115R TY015 JSB SAVES      SAVE PT OF SUSP AND REGISTERS
0322 02027 060123      LDA JBUF
0323 02030 072340R      STA IOC02
0324 02031 072070R      STA ID008+1
0325 02032 072036R      STA ++4      SET INPUT BUFFER ADDRESS
0326 02033 016506R      JSB $SYIO      REQUEST INPUT FROM SYSTEM TELETY
0327 02034 000001      DEC 1
0328 02035 000401      OCT 401
0329 02036 002036R      DEF *
0330 02037 000044      DEC 36
0331 02040 002042R      DEF TY020
0332 02041 026007R      JMP TY005
0333 02042 074332 TY020 STB CHARC      SAVE WORD COUNT
0334 02043 016115R      JSB SAVES      SAVE REGISTERS ETC
0335 02044 002400      CLA
0336 02045 070261      STA OPFLG      CLEAR SYS TTY BUSY FLAG
0337 02046 064332      LDB CHARC
0338 02047 016124R      JSB $TEST
0339 02050 060273      LDA $IDCD      TRANSFER TO INPUT TEST ROUTINE
0340 02051 002002      SZA          RETURNS ONLY IF ERROR OR WAITING F

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0341	02052	027777R	JMP TY002	
0342	02053	062114R	LDA IFLAG	IF OPERATOR ATTENTION, ATTEMPT T
0343	02054	002003	SZA,RSS	RETURN TO THE EXECUTING PROGR
0344	02055	026012R	JMP TY010	OTHERWISE, OUTPUT ANOTHER *
0345	02056	027777R	JMP TY002	
0346*				
0347	02015		SRTN EQU TY012	
0348*				
0349*			SIDL1 IS USED TO READ INPUT FROM THE BATCH DEVICE	
0350*				
0351*			IF BATCH DEVICE IS SYSTEM TELETYPE, TRANSFER IS	
0352*			MADE TO STYPE ROUTINE	
0353*				
0354	02057	060111	SIDL1 LDA BATCH	CHECK IF BATCH IS SYS TTY
0355	02060	050054	CPA .1	
0356	02061	026101R	JMP ID010	SYSTEM TELETYPE
0357	02062	072067R	STA ID008	
0358	02063	017145R	JSB LUCHK	SET LU EQT ENTRIES
0359	02064	017521R	JSB \$LDVR	NO, SO LOAD IN DRIVER
0360	02065	016506R	JSB \$SYIO	
0361	02066	000001	DEC 1	
0362	02067	002067R	ID008 DEF *	
0363	02070	002070R	DEF *	
0364	02071	000044	DEC 36	
0365	02072	002074R	DEF **2	
0366	02073	027641R	JMP \$WAIT	GO TO WAIT LOOP
0367	02074	160123	LDA JBUF,I	
0368	02075	010075	AND M1774	
0369	02076	052470R	CPA COLON	
0370	02077	016124R	JSB \$TEST	TRANSFER TO INPUT TEST ROUTINE
0371	02100	026057R	JMP \$IDL1	ERROR, SO READ NEXT INPUT
0372*				
0373	02101	060261	ID010 LDA OPFLG	CHECK IF TTY BUSY
0374	02102	002003	SZA,RSS	
0375	02103	026106R	JMP ID020	NO
0376	02104	034260	ISZ OPATN	YES, SO SET OPERATOR ATTENTION FL
0377	02105	027641R	JMP \$WAIT	
0378	02106	007400	ID020 CCB	SET STYPE TO WAIT TILL DONE
0379	02107	027772R	JMP \$STYPE	
0380	02110	006412	ASTAT OCT 6412	CR/LF
0381	02111	000000	NOP	* OR *
0382	02112	040137	ATT ASC 1,++	
0383	02113	025137	ASTRK ASC 1,++	
0384	02114	000000	IFLAG NOP	

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0386*
0387*      SAVES SAVES PT OF SUSPENSION AND REGISTERS FOR $TYPE ROUTINE.
0388*
0389*      CALLING SEQUENCE
0390*
0391*      JSB SAVES
0392*
0393 02115 000000 SAVES NOP
0394 02116 062123R LDA DEFXA
0395 02117 064047 LDB N4
0396 02120 017712R JSB $MOVE
0397 02121 000317 DEF SXA
0398 02122 126115R JMP SAVES,I
0399*
0400 02123 000237 DEFXA DEF XA
0401*
0402*
0403***** $TEST ROUTINE CHECKS IF DESIRED INPUT REQUEST HAS BEEN INPUT**
0404*
0405*      IF CORRECT INPUT NOT FOUND, RETURN IS MADE TO CALLER.
0406*
0407*      CALLING SEQUENCE:
0408*
0409*      JSB $TEST
0410*
0411 02124 000000 $TEST NOP
0412 02125 074332 STB CHARC      SAVE WORD COUNT
0413 02126 074274 STB $MDBF      STORE # WORDS INPUT
0414 02127 066124R LDB $TEST
0415 02130 074275 STB $MDBF+1  STORE RETN ADDR FOR EXEC MODULES
0416 02131 064123 LDB JBUF
0417 02132 160001 LDA B,I
0418 02133 010075 AND M1774
0419 02134 052470R CPA COLON
0420 02135 026165R JMP TE05
0421 02136 034261 TE02 ISZ OPFLG  SET SYS TTY BUSY FLAG
0422 02137 060304 LDA IGNFL  IF IGNFL NON-0, DON'T PRINT
0423 02140 002002 SZA
0424 02141 026157R JMP TE03
0425 02142 016506R JSB $SYIO
0426 02143 000002 DEC 2
0427 02144 000001 DEC 1
0428 02145 002161R DEF IGN
0429 02146 177770 DEC =8
0430 02147 002302R DEF TE55
0431 02150 064273 LDB $IDCD
0432 02151 056316R CPB CODE+2
0433 02152 027641R JMP $WAIT
0434 02153 060322 LDA SXSUS
0435 02154 016101R JSB ADCHK
0436 02155 026046R JMP $CIC3
0437 02156 026015R JMP TY012
0438*
0439 02157 114304 TE03 JSB IGNFL,I  PROCESS DATA COMM ROUTINE
0440 02160 026302R JMP TE55      RETURN
0441*

```

0442	02161	044507	IGN	ASC 4, IGNORED	
	02162	047117			
	02163	051105			
	02164	042040			
0443	02165	120001	TE05	XOR B, I	FORM CONTROL CODE
0444	02166	072505R		STA PAFLG	
0445	02167	006004		INB	
0446	02170	160001		LDA B, I	
0447	02171	010075		AND M1774	
0448	02172	032505R		IOR PAFLG	
0449	02173	001727		ALF, ALF	
0450	02174	072505R		STA PAFLG	
0451	02175	064273		LDB \$IDCD	
0452	02176	056325R		CPB CODE+9	CHECK IF WAITING FOR :DATE INPUT
0453	02177	026234R		JMP TE20	NO
0454	02200	052314R		CPA CODE	CHECK IF INPUT :ABORT
0455	02201	026330R		JMP TE90	
0456	02202	052317R		CPA CODE+3	CHECK IF INPUT :OFF
0457	02203	026330R		JMP TE90	-YES
0458	02204	056314R		CPB CODE	
0459	02205	026136R		JMP TE02	
0460	02206	052326R		CPA CODE+10	CHECK IF INPUT :TYPE
0461	02207	026352R		JMP TE120	
0462	02210	056316R		CPB CODE+2	CHECK IF WAITING FOR :GO INPUT
0463	02211	002001		RSS	YES
0464	02212	026237R		JMP TE22	NO
0465	02213	052316R		CPA CODE+2	CHECK IF INPUT :GO
0466	02214	006401		CLB, RSS	
0467	02215	026246R		JMP TE25	
0468	02216	074273		STB \$IDCD	
0469	02217	062506R		LDA SVEQT	
0470	02220	076506R		STB SVEQT	
0471	02221	002002		SZA	
0472	02222	026230R		JMP TE10	
0473	02223	062227R		LDA .16	
0474	02224	066226R		LDB DEF16	
0475	02225	026650R		JMP R4A	
0476	02226	000020X	DEF16	DEF SEX16	
0477	02227	000020	.16	DEC 16	
0478*					
0479	02230	052316R	TE10	CPA CODE+2	
0480	02231	026012R		JMP TY010	
0481	02232	017704R		JSB SETEQ	
0482	02233	026313R		JMP OPAGO	
0483	02234	052325R	TE20	CPA CODE+9	CHECK IF INPUT IS :DATE
0484	02235	026306R		JMP TE60	YES
0485	02236	026136R		JMP TE02	NO
0486	02237	056312R	TE22	CPB AJO	CHECK IF WAITING FOR :JOB-:EJOB
0487	02240	026273R		JMP TE50	YES
0488	02241	052315R		CPA CODE+1	CHECK IF INPUT :PAUSE
0489	02242	027765R		JMP TE110	YES
0490	02243	064141		LDB EXPG	NO, SO CHECK IF USER PROG RUNNING
0491	02244	006003		SZB, RSS	YES
0492	02245	026306R		JMP TE60	
0493	02246	052321R	TE25	CPA CODE+5	:LU
0494	02247	026267R		JMP TE40	

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0495 02250 052311R CPA TR          :TRACK REQUEST?
0496 02251 026263R JMP TE35      -YES, GO PROCESS IN SEX09
0497 02252 052313R CPA CODE+1
0498 02253 026267R JMP TE40
0499 02254 052322R CPA CODE+6      :EQ
0500 02255 026263R JMP TE35
0501 02256 052323R CPA CODE+7      :UP
0502 02257 026267R JMP TE40
0503 02260 052324R CPA CODE+8      :DN
0504 02261 026267R JMP TE40
0505 02262 026136R JMP TE02
0506 02263 060064 TE35 LDA .9
0507 02264 066266R LDB DEF09
0508 02265 026650R JMP R4A
0509 02266 000011X DEF09 DEF SEX09
0510 02267 062625R TE40 LDA .14
0511 02270 066272R LDB DEF14
0512 02271 026650R JMP R4A      LOAD + TRASFER TO SEX14
0513 02272 000016X DEF14 DEF SEX14
0514 02273 052312R TE50 CPA AJO      CHECK IF INPUT :JO
0515 02274 026306R JMP TE60
0516 02275 052320R CPA CODE+4      CHECK IF INPUT :EJ
0001 02276 026306R JMP TE60
0002 02277 002404 CLA,INA
0003 02300 050111 CPA BATCH      IS TTY THE BATCH DEVICE?
0004 02301 026136R JMP TE02
0005*
0006 02302 002400 TE55 CLA
0007 02303 070261 STA OPFLG
0008 02304 016115R JSB SAVES
0009 02305 126124R JMP $TEST,I
0010*
0011*      THIS PORTION OF $TEST LOADS IN THE JOB PROCESSOR/FILE MANAGER
0012*
0013 02306 016361R $JLOD JSB $CLER
0014 02306      TE60 EQU $JLOD
0015 02307 070141 STA EXPG
0016 02310 026711R JMP $LDEX
0017*
0018 02311 052122 TR ASC 1,TR
0019 02312 045117 AJO ASC 1,JO
0020 02313 053510 OCT 53510
0021 02314 040502 CODE ASC 12,ABRAG00FEJLUEQUPDNDATYCL
02315 050101
02316 043517
02317 047506
02320 042512
02321 046125
02322 042521
02323 052520
02324 042116
02325 042101
02326 052131
02327 041514

```

0022*

0023*

THIS PORTION OF \$TEST PROCESSES SYSTEM ABORT REQUESTS

```

0024*
0025 02330 002404 TE90 CLA,INA
0026 02331 070111 STA BATCH
0027 02332 001300 RAR
0028 02333 010113 SABRT AND DUMPS MASK WITH DUMP FLAG
0029 02334 070113 STA DUMPS SET DUMP FLAG
0030 02335 060323 LDA EFMP
0031 02336 002002 SZA EFMP ACTIVE?
0032 02337 114000 JSBI JSB A,I -YES, EXECUTE EFMP ERR. ROUT.
0033 02340 016361R JSB SCLER
0034 02341 070262 STA SWAP
0035 02342 070245 STA EXMOD
0036 02343 060106 LDA CLEX
0037 02344 001225 RAL,ERA
0038 02345 070106 STA CLEX
0039 02346 060070 LDA ,15
0040 02347 066351R LDB DEF15
0041 02350 026650R JMP R4A LOAD IN PROG. DUMP MODULE
0042 02351 000017X DEF15 DEF SEX15
0043*
0044 02352 060141 TE120 LDA EXPG
0045 02353 002303 CCE,SZA,RSS
0046 02354 026306R JMP TE60
0047 02355 060262 LDA SWAP
0048 02356 001225 RAL,ERA
0049 02357 070262 STA SWAP
0050 02360 126124R JMP STEST,I
0051*
0052 02361 000000 SCLER NOP
0053*
0054* ISSSE CLEAR REQUEST TO EACH BUSY DEVICE AND SET EOT
0055* STATUS TO PHOTOREADER
0056*
0057 02362 060120 LDA EQT# GET # OF EQT ENTRIES
0058 02363 003004 CMA,INA
0059 02364 072410R STA EQTCT SET UP CONTER
0060 02365 064117 LDB EQTAB
0061*
0062 02366 076411R SCL1 STB EQTPT SAVE POINTER TO EQT1 OF EACH DEVI
0063 02367 044056 ADB ,3 B POINTS TO EQR4
0064 02370 054333 CPB TYEQT SYSTEM TTY?
0065 02371 026427R JMP NXEQT YES, DON'T CLEAR
0066 02372 160001 LDA B,I AV/TYPE/STATUS
0067 02373 002021 SSA,RSS DEVICE BUSY?
0068 02374 026427R JMP NXEQT NO- CONTINUE
0069 02375 012502R AND ETYPE ISOLATE TYPE
0070 02376 052472R CPA DVRZZ DVR01 - PHOTOREADER?
0071 02377 026412R JMP SETET - YES, GO SET EOT
0072 02400 052503R CPA DISC DISC BUSY?
0073 02401 002001 RSS -YES, DON'T CLEAR BUT WAIT
0074 02402 026415R JMP SCL2 -NOT DISC, GO CLEAR,
0075 02403 062407R LDA ABRTN SET DISC
0076 02404 044056 ADB ,3 TO RETURN
0077 02405 170001 STA B,I TO SCLER+1
0078 02406 027661R JMP SKIP5
0079 02407 002362R ABRTN DEF SCLER+1

```

0080	02410	000000	EQTCT	NOP	
0081	02411	000000	EQTPT	NOP	
0082*					
0083	02412	160001	SETET	LDA B,I	
0084	02413	032471R		IOR .40	
0085	02414	170001		STA B,I	
0086*					
0087	02415	062411R	SCL2	LDA EQTPT	SET UP EQT1-EQT17
0088	02416	017704R		JSB SETEQ	
0089	02417	062467R		LDA DEFNX	SET RETURN ADDR. IN EQT7
0090	02420	170211		STA EQT7,I	
0091	02421	060056		LDA .3	SET CONTROL REQ.CODE IN EQT8
0092	02422	170212		STA EQT8,I	
0093	02423	002400		CLA	SET FUNCTION CODE IN EQT9
0094	02424	170213		STA EQT9,I	
0095	02425	017202R		JSB DRIVR	CLEAR DEVVCE
0096	02426	027661R		JMP SKIP5	WAIT UNTIL CLEAR IS COMPLETE
0097*					
0098	02427	066411R	NXEQT	LDB EQTPT	
0099	02430	044066		ADB .17	BUMP POINTER TO NEXT EQT1
0100	02431	036410R		ISZ EQTCT	ALL DEVICE GONE THROUGH?
0101	02432	026366R		JMP SCL1	NO. CONTINUE
0102*					
0103	02433	062500R		LDA SSTR	GET STC 0,C INSTRUCTION
0104	02434	072435R		STA **1	FOR SYSTEM TTY
0105	02435	000000		NOP	AND EXECUTE
0106	02436	000000	CLTBG	NOP	TURN ON TIME BASE GENERATOR
0107	02437	062773R		LDA STCS	
0108	02440	072146R		STA MPCOD	TURN MPON
0109	02441	002700		CLA,CCE	
0110	02442	064201		LDB INTAB	
0111	02443	170001		STA B,I	CLEAR INTERRUPT 6
0112	02444	006004		INB	
0113	02445	170001		STA B,I	CLEAR INTERRUPT 7
0114	02446	070315		STA IODMD	
0115	02447	072544R		STA IOCNT	
0116	02450	073566R		STA MEQT	CLEAR I/O MODULE AREA BUSY WAITIN
0117	02451	072560R		STA DEQT	CLEAR DMA BUSY WAITING FLAG
0118	02452	073601R		STA ERETN	CLEAR EXEC MODULE AREA BUSY WAITI
0119	02453	070261		STA OPFLG	
0120	02454	070260		STA OPATN	
0121	02455	072506R		STA SVEQT	
0122	02456	070327		STA TRAK#	
0123	02457	070133		STA MDFLG	CLEAR PRIVILEGED MODE FLAG
0124	02460	070134		STA DISP	
0125	02461	070135		STA AEPF	
0126	02462	070136		STA SGRTN	
0127	02463	070164		STA FILRW	
0128	02464	070304		STA IGNFL	
0129	02465	070303		STA TBFLG	
0130	02466	126361R		JMP SCLER,I	
0131*					
0132	02467	002427R	DEFNX	DEF NXEQT	
0133	02470	035000	COLON	OCT 35000	:/0
0134	02471	000040	.40	OCT 40	IGNORE LEADER CONSTANT
0135	02472	000400	DVRZZ	OCT 400	

0136	02473	000000	TEMPZ	NOP	
0137	02472		TEMP	EQU	*-2
0138	02474	000000		NOP	TEMP+2 TEMPORARIES FOR SMDLD
0139	02475	000000		NOP	TEMP+3
0140	02476	000000		NOP	TEMP+4
0141	02477	000000		NOP	TEMP+5

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0143*
0144******<SSTRT> ROUTINE IS SYSTEM STARTUP PROCEDURE
0145*
0146*      SYSTEM GENERATOR SETS  LOADING TRANSFER ADDRESS TO $SSTRT
0147*
0148*
0149*      WHEN SYSTEM IS RUNNING, THE FOLLOWING 5 LOCATIONS
0150*      ARE USED FOR TEMPORARY STORAGE
0151*
0152  02500 106700 $SSTRT CLC 0          CLEAR INTERRUPT SYSTEM
0153  02501 016626R      JSB CONFG      CONFIGURE INSTRUCTIONS FOR PRIV.
0154  02502 062624R      LDA .12
0155  02503 066505R      LDB DEF12
0156  02504 026650R      JMP R4A
0157*
0158  02505 000014X DEF12 DEF $EX12
0159  02505          PAFLG EQU DEF12
0160*
0161****** $SYIO HANDLES SYSTEM I/O REQUESTS *****
0162*
0163*
0164*      CALLING SEQUENCE
0165*      JSB $SYIO
0166*      DEC 1 FOR READ; 2 FOR WRITE; 3 FOR CONTROL
0167*      DEC <LOGICAL UNIT #>
0168*      DEF <BUFFER OR PARAMETER ADDRESS>
0169*      DEC <# CHARACTERS; OR 0 IF DISC>
0170*      DEF <COMPLETION RETURN ADDRESS>
0171*
0172  02506 000000 $SYIO NOP
0173  02507 062506R      LDA $SYIO
0174  02510 002004      INA
0175  02511 160000      LDA A,I
0176  02512 073201R      STA SAVEA
0177  02513 017145R      JSB LUCHK
0178  02514 017167R      JSB NULCK      LUN NULL?
0179  02515 026613R      JMP LUNUL      YES, COMPLETION RETURN
0180*
0181  02516 162506R      LDA $SYIO,I  *
0182  02517 002020      SSA           * IF CLEAR DEVICE REQUEST,
0183  02520 003004      CMA,INA       *
0184  02521 050056      CPA .3       * I.E., REQUEST CODE = 3
0185  02522 002001      RSS          *
0186  02523 026530R      JMP SY01     * & CONTROL FUNCTION = 0,
0187  02524 063201R      LDA SAVEA   *
0188  02525 013311R      AND MSKCL   * THEN DON'T WAIT IN DEVICE
0189  02526 002003      SZA,RSS     *
0190  02527 026561R      JMP SY10    * BUSY LOOP.
0191*
0192  02530 160206 SY01  LDA EQT4,I  CHECK IF DEVICE BUSY
0193  02531 002021      SSA,RSS      -YES
0194  02532 026545R      JMP SY05     -NO
0195  02533 007400      CCB
0196  02534 046506R      ADB $SYIO
0197  02535 160205      LDA EQT3,I
0198  02536 010072      AND M77

```

0199***** DEVICE CURRENTLY BUSY WAIT LOOP *****

0200*

0201* EQT1=EQT17 SET PRIOR TO ENTRY

0202* CALLING SEQUENCE:

0203*

0204* LDA <I/O CHANL#>

0205* LDB <RETURN ADDRESS WHEN DEVICE BECOMES FREE>

0206* JMP \$BLOP

0207*

0208 02537 072544R \$BLOP STA IOCNT SAVE BUSY I/O CHNL

0209 02540 076503R STB CALAD SAVE RETURN ADDRESS

0210 02541 060206 LDA EQT4

0211 02542 072502R STA DBUSY

0212 02543 027641R JMP \$WAIT

0213 02544 000000 IOCNT NOP

0214 02502 DBUSY EQU \$SSTR+2

0215 02503 CALAD EQU \$SSTR+3

0216*

0217 02545 164205 SY05 LDB EQT3,I

0218 02546 006020 SSB

DMA REQUIRED?

0219 02547 017317R JSB \$DMAX -YES, CHECK IT

0220 02550 026561R JMP SY10 CHAN 6 AVAIL

0221 02551 003401 CCA,RSS NO CHAN AVAIL.

0222 02552 026561R JMP SY10 CHAN 7 AVAIL.

0223 02553 042506R ADA \$SYIO

0224*

0225***** \$DMA ROUTINE WAITS FOR AVAILABILITY OF DMA CHANNEL *****

0226*

0227* EQT1=EQT17 ASSUMED TO BE SET PRIOR TO ENTRY

0228*

0229* CALLING SEQUENCE:

0230*

0231* LDA <RETURN ADDRESS WHEN DMA BECOMES FREE>

0232* JMP \$DMA

0233*

0234 02554 072501R \$DMA STA DMAAD SAVE RETURN ADDRESS

0235 02555 060203 LDA EQT1

0236 02556 072560R STA DEQT

0237 02557 027641R JMP \$WAIT

0238 02560 000000 DEQT NOP

0239 02501 DMAAD EQU \$SSTR+1

0240*

0241 02561 162506R SY10 LDA \$SYIO,I

0242 02562 002021 SSA,RSS

0243 02563 003004 CMA,INA

0244 02564 170212 STA EQT8,I SET REQUEST CODE INTO EQT

0245 02565 036506R ISZ \$SYIO

0246 02566 162506R LDA \$SYIO,I

0247 02567 170213 STA EQT9,I SET CONTROL WORD INTO EQT

0248 02570 036506R ISZ \$SYIO

0249 02571 162506R LDA \$SYIO,I

0250 02572 170214 STA EQT10,I SET BUFFER OR TRIPLET ADDRESS INTO EQT

0251 02573 036506R ISZ \$SYIO

0252 02574 162506R LDA \$SYIO,I

0253 02575 170215 STA EQT11,I SET # WORDS INTO EQT

0254 02576 036506R ISZ \$SYIO

0255	02577	162506R	LDA S\$YIO,I	SET COMPLETION RETURN ADDRESS
0256	02600	170211	STA EQT7,I	
0257	02601	036506R	ISZ S\$YIO	
0258	02602	017202R	JSB DRIVR	
0259	02603	126506R	JMP S\$YIO,I	RETURN
0260	02604	026602R	JMP *-2	
0261*				
0262	02605	000000	MPY17 NOP	
0263	02606	073671R	STA TMPX0	
0264	02607	001700	ALF	
0265	02610	043671R	ADA TMPX0	
0266	02611	040117	ADA EQTAB	
0267	02612	126605R	JMP MPY17,I	
0268*				
0269	02613	062506R	LUNUL LDA S\$YIO	
0270	02614	040057	ADA ..+4	RETURN TO P+4
0271	02615	006400	CLB	
0272	02616	124000	JMP A,I	

```

0274 02617 000023X DEF19 DEF SEX19
0275 02620 000024X DEF20 DEF SEX20
0276 02621 000026X DEF31 DEF SEX31
0277 02622 000027X DEF32 DEF SEX32
0278 02623 000030X DEF33 DEF SEX33
0279*
0280*
0281 02624 000014 .12 DEC 12
0282 02625 000016 .14 DEC 14
0283*
0284 01671 TMPX0 EQU RCHAN
0285 01704 TMPX1 EQU SETEQ
0286 01317 TMPX2 EQU $DMAX
0287*
0288*
0289* BUFFER TO HOLD SYSTEM BUFFER SECTOR
0290*
0291*
0292** CONFIG OVERLAYS $BUF AND DISAPPEARS AFTER
0293* SYSTEM STARTUP. IT CONFIGURES INSTRUCTIONS
0294* FOR PRIVILEGED INTERRUPT.
0295*
0296 02626 000000 CONFIG NOP
0297 02627 002400 CLA
0298 02630 070164 STA FILRW CLEAR FILRW (DSGEN DIDN'T CLEAR I
0299 02631 002004 INA SET MPTFL TO INDICATE MP OFF
0300 02632 070271 STA MPTFL
0301 02633 060270 LDA DUMMY PRIV. INTERRUPT PRESENT?
0302 02634 002003 SZA,RSS
0303 02635 026651R JMP CONF2 NO.
0304 02636 032176R IOR CLC1
0305 02637 072176R STA CLC1 CLEAR CONTROL
0306 02640 062177R LDA STF1 AND SET FLAG
0307 02641 030270 IOR DUMMY ON THE SPECIAL I/O CARD
0308 02642 072177R STA STF1 IN SIRT
0309 02643 062127R LDA STC1
0310 02644 030270 IOR DUMMY SET CONTROL ON IT IN SINT
0311 02645 072127R STA STC1
0312 02646 002400 CLA
0313 02647 072126R STA SKIP2
0314 02650 126626R JMP CONFIG,I RETURN
0315 02651 072056R CONF2 STA SKIP3 SET NOP'S
0316 02652 073661R STA SKIP5
0317 02653 072135R STA SKIP1
0318 02654 126626R JMP CONFIG,I RETURN.
0319*
0320 02626 $BUF EQU CONFIG
0321 02655 000000 BSS CONFIG-++128
0322 03026 000000 NOP
0323 02627 $B1 EQU $BUF+1
0324 02630 $B2 EQU $BUF+2
0325 02631 $B3 EQU $BUF+3
0326 02632 $B4 EQU $BUF+4
0327 02633 $B5 EQU $BUF+5
0328 02665 $B31 EQU $BUF+31
0329 02671 $B35 EQU $BUF+35

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0330	02726	\$B64	EQU	\$BUF+64
0331	02727	\$B65	EQU	\$BUF+65
0332	02730	\$B66	EQU	\$BUF+66
0333	02743	\$B77	EQU	\$BUF+77
0334	02765	\$B95	EQU	\$BUF+95
0335	03023	\$B125	EQU	\$BUF+125
0336	03025	\$B127	EQU	\$BUF+127
0337	03026	\$B128	EQU	\$BUF+128

0339	00000	A	EQU 0	
0340	00001	B	EQU 1	
0341*				
0342	00053	..	EQU 53B	
0343	00040	N64	EQU ..-11	DEC -64
0344	00041	N10	EQU ..-10	DEC -10
0345	00042	N9	EQU ..-9	DEC -9
0346	00043	N8	EQU ..-8	DEC -8
0347	00044	N7	EQU ..-7	DEC -7
0348	00045	N6	EQU ..-6	DEC -6
0349	00046	N5	EQU ..-5	DEC -5
0350	00047	N4	EQU ..-4	DEC -4
0351	00050	N3	EQU ..-3	DEC -3
0352	00051	N2	EQU ..-2	DEC -2
0353	00052	N1	EQU ..-1	DEC -1
0354*				
0355	00053	N0	EQU ..	DEC 0
0356*				
0357	00054	.1	EQU ..+1	DEC 1
0358	00055	.2	EQU ..+2	DEC 2
0359	00056	.3	EQU ..+3	DEC 3
0360	00057	.4	EQU ..+4	DEC 4
0361	00060	.5	EQU ..+5	DEC 5
0362	00061	.6	EQU ..+6	DEC 6
0363	00062	.7	EQU ..+7	DEC 7
0364	00063	.8	EQU ..+8	DEC 8
0365	00064	.9	EQU ..+9	DEC 9
0366	00065	.10	EQU ..+10	DEC 10
0367	00066	.17	EQU ..+11	DEC 17
0368	00067	.64	EQU ..+12	DEC 64
0369	00070	.15	EQU ..+13	
0370*				
0371	00070	M17	EQU ..+13	OCT 17
0372	00071	M37	EQU ..+14	OCT 37
0373	00072	M77	EQU ..+15	OCT 77
0374	00073	M177	EQU ..+16	OCT 177
0375	00074	M377	EQU ..+17	OCT 377
0376	00075	M1774	EQU ..+18	OCT 177400
0377	00076	M3777	EQU ..+19	OCT 3777
0378	00077	M1777	EQU ..+20	OCT 177700
0379*				

0381	00100	.	EQU 100H	STARTING ADDR OF SYSTEM COMMUN.
0382*				
0383	00100	UMLWA	EQU ,+0	LWA OF USEABLE MEMORY
0384*				
0385	00101	JBINS	EQU ,+1	START TR/SEC OF JBIN AREA
0386	00102	JBINC	EQU ,+2	CURRENT TR/SEC OF JBIN AREA
0387*				
0388	00103	TBG	EQU ,+3	TIME BASE GENERATOR I/O ADDRESS
0389	00104	CLOCK	EQU ,+4	CURRENT SYSTEM CLOCK TIME
0390	00106	CLEX	EQU ,+6	EXECUTION TIME CLOCK
0391	00110	CXMX	EQU ,+8	MAXIMUM ALLOWABLE EXECUTION TIME
0392*				
0393	00111	BATCH	EQU ,+9	L. U. OF BATCH INPUT DEVICE
0394	00112	SYSTY	EQU ,+10	L. U. OF SYSTEM TELETYPE
0395	00113	DUMPS	EQU ,+11	ABORT /POST MORTEM DUMP FLAG
0396	00114	SYSDR	EQU ,+12	SYSTEM DIRECTORY TRACK/SECTOR
0397*				
0398	00115	SYSBF	EQU ,+13	START SYS BUF T/USER DIRECT SECT
0399	00116	SECTR	EQU ,+14	# OF SECTRS/TRACK
0400*				
0401	00117	EQTAB	EQU ,+15	FWA OF EQUIPMENT TABLE
0402	00120	EQT#	EQU ,+16	# OF EQUIPMENT ENTRIES
0403*				
0404	00121	LUTAB	EQU ,+17	FWA OF LOGICAL UNIT TABLE
0405	00122	LUT#	EQU ,+18	# OF LOGICAL UNIT ENTRIES
0406	00123	JBUF	EQU ,+19	JOB INPUT BUFFER ADDRESS
0407*				
0408	00124	JFILS	EQU ,+20	SOURCE FILE START TRACK/SECTOR
0409	00125	JFILC	EQU ,+21	SOURCE FILE CURRENT TRACK/SECTOR
0410*				
0411*				
0412	00126	RONBF	EQU ,+22	USER AREA FILE NAME INFORMATION
0413	00133	MDFLG	EQU RONBF+5	PRIVILEGED MODE FLAG
0414	00134	DISP	EQU RONBF+6	
0415	00135	AEPF	EQU RONBF+7	ALTERNATIVE TRANSFER ADDRESS
0416*				FOR PROG OR SEG LOAD
0417	00136	SGRTN	EQU RONBF+8	SEGMENT RETURN ADDRESS.
0418*				
0419	00137	XIRT	EQU RONBF+9	TRANSFER ADDRESS FOR SIRT
0420	00140	SVEQ	EQU RONBF+10	EXEC 18 NEEDS THIS LOC.
0421	00141	EXPG	EQU ,+33	DIRECTORY ENTRY FOR CURRENT PROG
0422*				
0423	00154	DISCO	EQU ,+44	IO CHNL #/ LAST TRACK ON DISC
0424	00155	SYSSC	EQU ,+45	SYSTEM SUBCHANNEL
0425	00156	SCCNT	EQU ,+46	# OF SUBCHANNELS ON SYSTEM
0426	00157	UDNTS	EQU ,+47	NEXT USER DISC TRACK/SECTOR
0427	00160	SYNTS	EQU ,+48	NEXT SYSTEM DISC TRACK/SECTOR
0428	00161	CUDSC	EQU ,+49	CURRENT USER DISC SUBCHANNEL
0429	00162	CRFLG	EQU ,+50	0 FOR SYSTEM, NOT 0 FOR USER
0430	00163	CUDLA	EQU ,+51	CURRENT USER DISC LAST ACCESS
0431	00164	FILRW	EQU ,+52	FILE SEARCH W/O WAIT FLAG
0432	00165	CUMID	EQU ,+53	COMPUTER IDENTIFICATION
0433	00166	DBUFR	EQU ,+54	SYSTEM DISC TRIPLET PARAM BUFFER
0434	00171	UBUFR	EQU ,+57	USER DISC TRIPLET PARAM BUFFER
0435	00174	TSONE	EQU ,+60	LAST TRACK/SECTOR REFERENCED +1
0436	00175	GUDSC	EQU ,+61	DEFAULT USER DISC SUBCHANNEL

0437	00176	SYSCD EQU	.,+62	SYSTEM GENERATION CODE
0438	00177	JFLSC EQU	.,+63	JFILE SUBCHANNEL
0439	00200	DISCL EQU	.,+64	T/S OF SYS BUF IF USER ON SYS DI
0440*				
0441	00201	INTAB EQU	.,+65	FWA OF INTERRUPT TABLE
0442	00202	INT# EQU	.,+66	# OF INTERRUPT ENTRIES
0443*				
0444	00203	EQT1 EQU	.,+67	ADDRESSES
0445	00204	EQT2 EQU	.,+68	
0446	00205	EQT3 EQU	.,+69	OF
0447	00206	EQT4 EQU	.,+70	
0448	00207	EQT5 EQU	.,+71	CURRENT
0449	00210	EQT6 EQU	.,+72	
0450	00211	EQT7 EQU	.,+73	EQUIPMENT
0451	00212	EQT8 EQU	.,+74	
0452	00213	EQT9 EQU	.,+75	TABLE
0453	00214	EQT10 EQU	.,+76	
0454	00215	EQT11 EQU	.,+77	
0455	00216	EQT12 EQU	.,+78	ENTRY
0456	00217	EQT13 EQU	.,+79	
0457	00220	EQT14 EQU	.,+80	
0458	00221	EQT15 EQU	.,+81	
0459	00222	EQT16 EQU	.,+82	
0460	00223	EQT17 EQU	.,+83	
0461*				
0462	00224	RQCNT EQU	.,+84	# OF REQUEST PARAMETERS
0463	00225	RQRTN EQU	.,+85	REQUEST RETURN ADDRESS
0464*				
0465	00226	RQP1 EQU	.,+86	ADDRESSES
0466	00227	RQP2 EQU	.,+87	
0467	00230	RQP3 EQU	.,+88	OF
0468	00231	RQP4 EQU	.,+89	
0469	00232	RQP5 EQU	.,+90	REQUEST
0470	00233	RQP6 EQU	.,+91	
0471	00234	RQP7 EQU	.,+92	PARAMETERS
0472	00235	RQP8 EQU	.,+93	
0473*				
0474	00236	NABRT EQU	.,+94	ILL REQ ABORT/NO ABORT OPTION
0475*				
0476	00237	XA EQU	.,+95	A REGISTER
0477	00240	XB EQU	.,+96	B REGISTER
0478	00241	XEO EQU	.,+97	E AND O REGISTER
0479	00242	XSUSP EQU	.,+98	POINT OF SUSPENSION
0480*				
0481	00243	EXLOC EQU	.,+99	LOC OF EX MOD DOUBLET
0482	00244	EX# EQU	.,+100	# OF EX MOD DOUBLET
0483	00245	EXMOD EQU	.,+101	CURRENT EX MOD #
0484	00246	EXMAN EQU	.,+102	EX MOD MAIN LOAD ADDRESSES
0485	00250	EXBAS EQU	.,+104	EX MOD BASE LOAD ADDRESSES
0486*				
0487	00252	IODMN EQU	.,+106	FWA OF IO DRIVER MOD MAIN AREA
0488	00253	IODBS EQU	.,+107	FWA OF IO DRIVER MOD BASE AREA
0489*				
0490	00254	UMFWA EQU	.,+108	FWA OF USER MAIN AREA
0491	00255	UBFWA EQU	.,+109	FWA OF USER BASE AREA
0492	00256	UBLWA EQU	.,+110	LWA OF USER BASE AREA

0493*			
0494	00257	CHAN EQU .+111	CURRENT DMA CHANNEL NUMBER
0495*			
0496	00260	OPATN EQU .+112	OPERATOR/KEYBOARD ATTENTION FLAG
0497	00261	OPFLG EQU .+113	OPERATOR COMMUNICATION FLAG
0498*			
0499	00262	SWAP EQU .+114	JOB PROCESSOR NOT IN/IN FLAG
0500*			
0501	00263	JOBPM EQU .+115	JOB PROC MAIN (T/S)#WORDS)
0502	00265	JOBPB EQU .+117	JOB PROC BASE (#WORDS)
0503	00266	EJOBFB EQU .+118	
0504	00267	RTRK EQU .+119	RT DISC ALLOC TRACK #
0505*			
0506	00270	DUMMY EQU .+120	I/O ADDR OF PRIV INT CARD
0507	00271	MPTFL EQU .+121	MEMORY PROTECT FLAG
0508*			
0509	00272	\$GOPT EQU .+122	PT OF SUSP CONTINUATION ADDRESS
0510	00273	\$IDCD EQU .+123	INPUT REQUEST CODE
0511	00274	\$MDBF EQU .+124	EXEC MODULE DATA BUFFER
0512*			
0513	00303	TBFLG EQU .+131	DATA COMM TIME BASE GEN FLAG
0514	00304	IGNFL EQU .+132	FLAG FOR DATA COMMUNICATIONS;
0515*			NON=0: DON'T PRINT 'IGNORED' MESS
0516	00305	TEMP0 EQU .+133	USED
0517	00306	TEMP1 EQU .+134	IN
0518	00307	TEMP2 EQU .+135	SYSTEM
0519	00310	UTMP0 EQU .+136	*
0520	00311	UTMP1 EQU .+137	* USER AVAILABLE BASE PAGE TEMP
0521	00312	UTMP2 EQU .+138	*
0522	00313	MSECT EQU .+139	NEG OF SECTORS/TRACK VALUE
0523	00314	VADR EQU .+140	ADDRESS OF VIOLATING INSTRUCTION
0524	00315	IODMD EQU .+141	RES I/O DRIVER MODULE FLAG
0525	00316	RCODE EQU .+142	POSITIVE REQUEST CODE VALUE
0526	00317	SXA EQU .+143	
0527	00320	SXB EQU .+144	
0528	00321	SXEO EQU .+145	
0529	00322	SXSUS EQU .+146	
0530	00323	EFMP EQU .+147	EFMP FLAG
0531	00324	DSCLB EQU .+148	DISC T/S OF RELOCATABLE LIBRARY
0532	00325	DSCL# EQU .+149	# OF RELOCATABLE LIBRARY SECTORS
0533	00326	LSTCH EQU .+150	LAST DISC REFERENCED
0534	00327	TRAK# EQU .+151	# OF BAD TRACKS FOUND
0535	00330	XFLG EQU .+152	END ADDRESS FOR DISC NOT READY
0536	00331	SSFLG EQU .+153	SYSTEM SEARCH FLAG
0537	00332	CHARC EQU .+154	
0538	00333	TYEQT EQU .+155	
0539		END	

** NO ERRORS*

\$ABRT 00028/05 00005/02

\$B1 00323/05 00018/02

\$B125 00335/05 00019/02

\$B127 00336/05 00019/02

\$B128 00337/05 00019/02

\$B2 00324/05 00018/02

\$B3 00325/05 00018/02

\$B31 00328/05 00018/02

\$B35 00329/05 00018/02

\$B4 00326/05 00018/02

\$B5 00327/05 00018/02

\$B64 00330/05 00018/02

\$B65 00331/05 00019/02

\$B66 00332/05 00019/02

\$B77 00333/05 00019/02

\$B95 00334/05 00019/02

\$BLOP 00208/05 00005/02

\$BUF 00320/05 00018/02 00323/05 00324/05 00325/05 00326/05 00327/05
00328/05 00329/05 00330/05 00331/05 00332/05 00333/05 00334/05
00335/05 00336/05 00337/05

\$CIC 00121/02 00003/02 00126/02 00130/02 00177/03

\$CIC3 00170/02 00006/02 00436/04

\$CL1 00062/05 00101/05

\$CL2 00087/05 00074/05

\$CLCK 00303/02 00020/02 00139/02 00316/02 00325/02

\$CLER 00052/05 00006/02 00327/02 00013/05 00033/05 00079/05 00130/05

\$DISC 00245/04 00003/02 00003/04 00271/04

\$DMA 00234/05 00008/02

\$DMAx 00655/03 00571/03 00659/03 00663/03 00664/03 00665/03 00131/04

00219/05 00286/05
\$EBSY 00083/04 00813/03
\$EOAB 00175/02 00164/02 00167/02 00182/02 00279/03
\$EX01 00012/02 00421/03
\$EX02 00012/02 00422/03
\$EX03 00012/02 00411/03
\$EX04 00012/02 00412/03
\$EX05 00012/02 00413/03 00414/03 00415/03
\$EX06 00012/02 00423/03
\$EX07 00012/02 00416/03
\$EX08 00013/02 00409/03
\$EX09 00013/02 00509/04
\$EX10 00013/02 00316/03
\$EX11 00013/02 00485/03
\$EX12 00013/02 00158/05
\$EX13 00013/02 00667/03
\$EX14 00013/02 00513/04
\$EX15 00014/02 00042/05
\$EX16 00014/02 00476/04
\$EX17 00014/02 00428/03
\$EX18 00014/02 00405/03 00406/03 00407/03 00408/03 00419/03 00420/03
\$EX19 00014/02 00274/05
\$EX20 00014/02 00275/05
\$EX30 00015/02 00429/03
\$EX31 00015/02 00276/05
\$EX32 00015/02 00277/05
\$EX33 00015/02 00278/05
\$EX34 00016/02 00430/03

\$EX35 00016/02 00431/03
\$EX36 00016/02 00432/03
\$EX37 00016/02 00433/03
\$EXEC 00172/03 00137/02
\$GOPT 00509/05 00277/04
\$IDCD 00510/05 00279/04 00339/04 00431/04 00451/04 00468/04
\$IDL1 00354/04 00003/02 00371/04
\$INT 00220/02 00129/02 00223/02 00229/02 00168/03
\$IOCM 00350/02 00157/02
\$IRT 00249/02 00020/02 00165/02 00516/02 00210/03 00286/03 00379/03
00394/03 00267/04 00319/04
\$IRT1 00270/02 00168/02 00250/02 00295/02 00159/04
\$JLOD 00013/05 00004/02 00014/05
\$LDEX 00312/03 00003/02 00016/05
\$LDVR 00023/04 00008/02 00027/04 00034/04 00036/04 00359/04
\$MBSY 00070/04 00008/02 00129/04
\$MDBF 00511/05 00431/02 00438/02 00442/02 00464/03 00466/03 00693/03
00088/04 00090/04 00148/04 00150/04 00413/04 00415/04
\$MDLD 00750/03 00004/02 00276/03 00401/03 00157/04
\$MOVE 00220/04 00004/02 00420/02 00235/03 00223/04 00225/04 00234/04
00396/04
\$OPER 00553/02 00006/02 00206/02 00250/04 00270/04
\$PFAL 00017/02 00134/02
\$RGER 00681/03 00004/02
\$RTRN 00347/04 00010/02
\$SETP 00017/02 00205/04
\$STRT 00152/05 00003/02 00103/05 00214/05 00215/05 00239/05
\$SYIO 00172/05 00010/02 00251/04 00299/04 00326/04 00360/04 00425/04
00173/05 00181/05 00196/05 00223/05 00241/05 00245/05 00246/05
00248/05 00249/05 00251/05 00252/05 00254/05 00255/05 00257/05
00259/05 00269/05

\$TEST	00411/04	00352/03	00338/04	00370/04	00414/04	00009/05	00050/05
\$TYPE	00292/04	00010/02	00212/02	00379/04			
\$WAIT	00142/04	00005/02	00417/02	00210/03	00073/04	00092/04	00259/04
	00307/04	00310/04	00366/04	00377/04	00433/04	00212/05	00237/05
.	00381/05	00383/05	00385/05	00386/05	00388/05	00389/05	00390/05
	00391/05	00393/05	00394/05	00395/05	00396/05	00398/05	00399/05
	00401/05	00402/05	00404/05	00405/05	00406/05	00408/05	00409/05
	00412/05	00421/05	00423/05	00424/05	00425/05	00426/05	00427/05
	00428/05	00429/05	00430/05	00431/05	00432/05	00433/05	00434/05
	00435/05	00436/05	00437/05	00438/05	00439/05	00441/05	00442/05
	00444/05	00445/05	00446/05	00447/05	00448/05	00449/05	00450/05
	00451/05	00452/05	00453/05	00454/05	00455/05	00456/05	00457/05
	00458/05	00459/05	00460/05	00462/05	00463/05	00465/05	00466/05
	00467/05	00468/05	00469/05	00470/05	00471/05	00472/05	00474/05
	00476/05	00477/05	00478/05	00479/05	00481/05	00482/05	00483/05
	00484/05	00485/05	00487/05	00488/05	00490/05	00491/05	00492/05
	00494/05	00496/05	00497/05	00499/05	00501/05	00502/05	00503/05
	00504/05	00506/05	00507/05	00509/05	00510/05	00511/05	00513/05
	00514/05	00516/05	00517/05	00518/05	00519/05	00520/05	00521/05
	00522/05	00523/05	00524/05	00525/05	00526/05	00527/05	00528/05
	00529/05	00530/05	00531/05	00532/05	00533/05	00534/05	00535/05
	00536/05	00537/05	00538/05				
..	00342/05	00270/05	00343/05	00344/05	00345/05	00346/05	00347/05
	00348/05	00349/05	00350/05	00351/05	00352/05	00353/05	00355/05
	00357/05	00358/05	00359/05	00360/05	00361/05	00362/05	00363/05
	00364/05	00365/05	00366/05	00367/05	00368/05	00369/05	00371/05
	00372/05	00373/05	00374/05	00375/05	00376/05	00377/05	00378/05
.1	00357/05	00443/02	00206/03	00245/03	00378/03	00701/03	00804/03
	00355/04						
.10	00366/05	00312/03	00691/03				
.11	00486/03	00467/03					
.1100	00427/02	00302/03					
.12	00281/05	00451/02	00475/03	00154/05			
.13	00255/04	00429/02	00467/02	00715/03			
.14	00282/05	00583/03	00510/04				
.15	00369/05	00585/03	00039/05				
.16	00477/04	00473/04					
.17	00367/05	00206/04	00099/05				
.2	00358/05	00472/03	00586/03	00679/03	00053/04		
.3	00359/05	00328/02	00439/02	00305/03	00398/03	00561/03	00619/03

00703/03 00029/04 00115/04 00063/05 00076/05 00091/05 00184/05

.4 00360/05 00133/02 00455/02 00468/02 00474/02 00329/03 00340/03
00628/03 00712/03

.40 00134/05 00342/03 00084/05

.5 00361/05 00136/02 00188/03 00617/03

.6 00362/05 00277/02 00399/03 00569/03 00683/03

.64 00368/05

.7 00363/05 00286/02 00685/03

.8 00364/05 00217/03 00687/03 00814/03

.9 00365/05 00689/03 00705/03 00506/04

A 00339/05 00141/02 00282/02 00306/02 00388/02 00176/03 00184/03
00243/03 00266/03 00270/03 00387/03 00506/03 00525/03 00643/03
00769/03 00792/03 00030/04 00032/05 00175/05 00272/05

ABRTN 00079/05 00075/05

ADCHK 00193/02 00160/02 00197/02 00198/02 00330/02 00367/02 00492/02
00192/03 00309/04 00435/04

AEFF 00415/05 00125/05

AJO 00019/05 00486/04 00514/04

ASTAT 00380/04 00296/04 00302/04

ASTRK 00383/04 00293/04

ATT 00382/04 00295/04

B 00340/05 00148/02 00156/02 00382/02 00191/03 00215/03 00220/03
00223/03 00280/03 00386/03 00473/03 00512/03 00576/03 00579/03
00587/03 00592/03 00658/03 00662/03 00706/03 00183/04 00186/04
00189/04 00417/04 00443/04 00446/04 00066/05 00077/05 00083/05
00085/05 00111/05 00113/05

B31 00820/03 00483/02

BATCH 00393/05 00380/02 00354/04 00003/05 00026/05

BIT15 00521/02 00497/02 00545/02

CALAD 00215/05 00120/04 00209/05

CHAN 00494/05 00570/03 00574/03

CHARC 00537/05 00204/02 00428/02 00333/04 00337/04 00412/04

CHEKE 00811/03 00777/03

CIC.2 00154/02 00150/02

CIC.3 00159/02 00143/02 00146/02 00152/02 00170/02 00508/02 00533/02
00261/04

CIC.4 00167/02 00161/02 00178/03

CKSRH 00538/02 00493/02

CLC1 00292/02 00304/05 00305/05

CLC5 00369/03 00253/02 00363/03

CLCK1 00313/02 00309/02

CLEX 00390/05 00313/02 00315/02 00317/02 00321/02 00322/02 00036/05
00038/05

CLOCK 00389/05 00308/02 00311/02 00312/02 00294/03

CLTBG 00106/05 00304/03

CODE 00021/05 00404/02 00278/04 00432/04 00452/04 00454/04 00456/04
00458/04 00460/04 00462/04 00465/04 00479/04 00483/04 00488/04
00493/04 00497/04 00499/04 00501/04 00503/04 00516/04

CODE# 00436/03 00259/03 00263/03

COLON 00133/05 00390/02 00369/04 00419/04

CONF2 00315/05 00303/05

CONFG 00296/05 00153/05 00314/05 00318/05 00320/05 00321/05

CRFLG 00429/05 00824/03

CSY10 00251/04 00246/04 00249/04

*CUDLA 00430/05

*CUDSC 00428/05

CUMID 00432/05 00660/03

CXMX 00391/05 00323/02

DBFR 00009/04 00001/04

DBUFR 00433/05 00783/03 00786/03 00794/03 00799/03 00802/03 00822/03
00005/04 00009/04 00041/04 00044/04 00048/04 00051/04

DBUSY 00214/05 00113/04 00211/05

DCOMP 00268/04 00256/04

DEF04 00412/03 00011/02
DEF09 00509/04 00507/04
DEF10 00316/03 00313/03
DEF11 00485/03 00468/03
DEF12 00158/05 00155/05 00159/05
DEF13 00667/03 00709/03
DEF14 00513/04 00511/04
DEF15 00042/05 00040/05
DEF16 00476/04 00474/04
*DEF17 00428/03
*DEF18 00405/03
DEF19 00274/05 00011/02
DEF20 00275/05 00011/02
*DEF30 00429/03
DEF31 00276/05 00011/02
DEF32 00277/05 00011/02
DEF33 00278/05 00011/02
DEFE1 00208/04 00204/04
DEFNX 00132/05 00089/05
DEFXA 00400/04 00394/04
DEQT 00238/05 00134/04 00138/04 00117/05 00236/05
DEQT1 00273/04 00248/04 00268/04
DFRON 00395/03 00384/03 00393/03
DFWAT 00360/03 00348/03
DISC 00551/02 00452/02 00072/05
*DISCL 00439/05
*DISCO 00423/05
DISCX 00821/03 00797/03 00807/03 00008/04 00046/04 00056/04

DISP 00414/05 00161/04 00163/04 00124/05
DMAAD 00239/05 00139/04 00234/05
DRIVR 00553/03 00009/02 00616/03 00635/03 00636/03 00095/05 00258/05
*DSCL# 00532/05
*DSCLB 00531/05
DUMMY 00506/05 00301/05 00307/05 00310/05
DUMPS 00395/05 00028/05 00029/05
DVR00 00569/03 00563/03
DVR01 00575/03 00572/03
DVR02 00577/03 00556/03 00567/03
DVR06 00619/03 00606/03
DVR07 00617/03 00573/03
DVR08 00627/03 00624/03
DVR09 00635/03 00618/03 00630/03
DVRZZ 00135/05 00070/05
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ID020 00378/04 00375/04
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*JOBPM 00501/05
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MDCOR 00767/03 00756/03
MDFLG 00413/05 00435/02 00503/02 00521/02 00531/02 00198/03 00325/03
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MDY 00808/03 00781/03

MEMPT 00362/03 00435/03

MEQT 00074/04 00072/04 00122/04 00128/04 00116/05

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N6 00348/05 00140/02

N600 00335/02 00310/02 00320/02

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OPFLG 00497/05 00205/02 00298/04 00336/04 00373/04 00421/04 00007/05
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PAFLG 00159/05 00403/02 00444/04 00448/04 00450/04

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00358/03 00367/03 00707/03 00815/03

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R2A 00296/03 00426/03

R2X 00289/03 00427/03

R4 00264/03 00483/03

R4A 00274/03 00314/03 00469/03 00475/04 00508/04 00512/04 00041/05
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RC 00187/04 00184/04

RCHAN 00180/04 00352/02 00621/03 00188/04 00190/04 00284/05

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RQP1A 00236/03 00240/03

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*RQP8 00472/05
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RTBG2 00307/03 00303/03
RTRK 00504/05 00357/03
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00398/04 00008/05
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*SYSCD 00437/05
*SYSDR 00396/05
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TRAK# 00534/05 00122/05
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TY005 00305/04 00332/04
TY010 00308/04 00344/04 00480/04
TY012 00311/04 00347/04 00437/04
TY015 00321/04 00304/04

TY020 00333/04 00331/04
TYEQT 00538/05 00478/02 00064/05
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PUBLWA 00492/05
PUBUFR 00434/05
PUDNTS 00426/05
UMFWA 00490/05 00195/02
PURLWA 00383/05
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