

2000F/C HIGH SPEED TSB I/O PROCESSOR
(REV. C)

BINARY TAPE	24262-60001
SOURCE TAPES	24262-80001
	24262-80002
	24262-80003
	24262-80004
	24262-80005
	24262-80006
	24262-80007
	24262-80008
SOURCE LISTING	24262-90001

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0001

ASMB,A,B,L

** NO ERRORS*

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0001          ASMB,A,B,L
0002 00002          ORG 2
0003 00011          C2   EQU 11B      2116 TO 2114 CHANNEL
0004 00013          PR   EQU 13B      PHOTOREADER CHANNEL
0005*
0006*          THIS PROGRAM IS THE FIRST OF THE TWO PROGRAMS
0007* ON THE I/O PROCESSOR PROGRAM TAPE. IT READS
0008* SINGLE CHARACTERS AND PASSES THEM TO THE BASIC
0009* BINARY LOADER IN THE I/O PROCESSOR ON ONE OF THE
0010* COMMUNICATIONS CHANNELS.
0011*
0012*          THIS PROGRAM MAY BE USED TO LOAD ANY
0013* ABSOLUTE BINARY TAPE INTO THE I/O PROCESSOR
0014*
0015 00002          TWP   EQU *
0016 00002 103713   STC PR,C      START PHOTOREADER
0017 00003 102313   SFS PR        WAIT FOR A CHARACTER
0018 00004 024003   JMP *-1
0019 00005 102513   LIA PR        GET CHARACTER FROM PHOTOREADER
0020 00006 102311   SFS C2       WAIT FOR 2114 TO ACKNOWLEDGE
0021 00007 024000   JMP *-1     PREVIOUS CHARACTER,
0022 00010 102611   UTA C2       OUTPUT THIS ONE
0023 00011 103711   STC C2,C     SET FLAG
0024 00012 024002   JMP TWP    GET NEXT CHARACTER
0025          END
** NO ERRORS*

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PAGE 0001

0001

ASMB,A,B,C,L

I/O PROGRAM 2000C(HS) VERSION C...

** NO ERRORS*

		ASMB, A, B, C, L	I/O PROGRAM 2000C(HS) VERSION C	
0001			ORG 2	
0002	00002		JMP **+1, I	
0003	00002 124003		DEF INI	ADDRESS OF INITIALIZER
0004	00003 006747		JSB POW, I	POWER FAIL
0005	00004 114337		HLT 5	PARITY ERROR
0006	00005 102005		SUP	
0007				
0008	00000	A	EQU 0	A REGISTER ADDRESS
0009	00001	B	EQU 1	B REGISTER ADDRESS
0011	00010	C1	EQU 10B	CHANNEL FROM OTHER MACHINE
0012	00011	C2	EQU 11B	CHANNEL TO OTHER MACHINE
0013	00010		ORG C1	
0014	00010 114353		JSB PRFS, I	
0015	00011 106711		CLC C2	
0017	00012	TBASE	EQU 12B	
0018	00012		ORG TBASE	
0019	00012 114341		JSB TBGDR, I	
0021	00013	MPX	EQU 13B	
0022	00013		ORG MPX	
0023	00013 114354		JSB PMPXI, I	
0024	00014 000000		NOP	
0026	00015	DSCB1	EQU 15B	
0027	00015		ORG DSCB1	
0028	00015 114325		JSB DSDR1, I	
0030	00016	MPY	EQU 16B	
0031	00016		ORG MPY	
0032	00016 114355		JSB PMPYI, I	
0033	00017 000000		NOP	
0035	00020	DSCB2	EQU 20B	
0036	00020		ORG DSCB2	
0037	00020 114326		JSB DSDR2, I	
0039*				
0040**				
0041***	PANIC ROUTINE			
0042**				
0043*				
0044*	IF THE I/O PROCESSOR CRASHES, START THE MACHINE AT LOCATION			
0045*	40B AND THIS ROUTINE WILL MAKE THE NECESSARY RESPONSES SO			
0046*	THAT THE SYSTEM CAN BE SLEPT. THEN THE I/O PROCESSOR CAN BE			
0047*	RE-LOADED AND THE SYSTEM CAN BE BROUGHT UP FROM DISC.			
0048*				
0049	00040		ORG 40B	
0050	00040	PANIC	EQU *	
0051	00040 060171		LDA *,+15B	
0052	00041 102610		OTA C1	CONTINUE
0053	00042 103710		STC C1, C	RESPONDING
0054	00043 106710		CLC C1	TO OTHER
0055	00044 024040		JMP PANIC	MACHINE

0057*

0058**

MULTIPLEXER CONSTANTS AND TEMPORARIES

0059*

0060	00045	000000	XTNUM	BSS	1	=>	PORT NUMBER
0061	00046	000000	XCCNT	BSS	1	=>	CHARACTER COUNT
0062	00047	000000	XBPNT	BSS	1	=>	RUNNING BUFFER POINTER
0063	00050	000000	XBSTR	BSS	1	=>	START OF BUFFER
0064	00051	000000	XBHED	BSS	1	=>	START OF FIRST BUFFER
0065	00052	000000	XBSAV	BSS	1	=>	SAVED BUFFER POINTER
0066	00053	000000	XBGIN	BSS	1	=>	START OF PHYSICAL BUFFER
0067	00054	000000	XBEND	BSS	1	=>	END OF PHYSICAL BUFFER
0068	00055	000000	XSTAT	BSS	1	=>	STATUS
0069	00056	000000	XATIM	BSS	1	=>	ALLOWED <ENTER> TIME
0070	00057	000000	XTYPE	BSS	1	=>	TERMINAL TYPE
0071	00060	000000	XDCNT	BSS	1	=>	CR AND LF DELAY COUNT
0072	00061	000000	XSCNT	BSS	1	=>	CR DELAY CHARACTER COUNT

0073*

0074	00002	000000	MPXA	BSS	1
0075	00003	000000	MPXB	BSS	1
0076	00004	000000	MPXE	BSS	1
0077	00005	000000	MPYA	BSS	1
0078	00006	000000	MPYB	BSS	1
0079	00007	000000	MPYE	BSS	1
0080	00070	000000	XCHAR	BSS	1
0081	00071	000000	XTPNT	BSS	1
0082	00072	000000	MPXT0	BSS	1
0083	00073	000000	MPXLC	BSS	1
0084	00074	000000	LOWER	BSS	1
0085	00075	000000	MPXUC	BSS	1
0086	00076	000000	UPPER	BSS	1
0087	00077	000000	XFLAG	OCT	0
0088	00100	000000	YFLAG	OCT	0

R S
E T
G O
I R
S A
T G
R E
TEMPORARY CHARACTER STORAGE
BUFFER POINTER TEMPORARY
TEMPORARY STORAGE
LOWER MPX SC STORAGE
UPPER MPX SC STORAGE
X-MULTIPLEXER FLAG
Y-MULTIPLEXER FLAG

0089*

0090**

LINE PRINTER CONSTANTS AND TEMPORARIES

0091*

0092	00101	000000	PRISC	OCT	0
0093	00102	000000	LPTYP	OCT	0
0094	00103	000000	LPTTY	OCT	0
0095	00104	000000	TLSUP	OCT	0
0096	00105	000000	TLPR	OCT	0
0097	00106	000000	LFLAG	OCT	0
0098	00107	000000	LPERF	OCT	0
0099	00110	000000	LPDRF	OCT	0
0100	00111	000000	LPDIS	OCT	0
0101	00112	000000	LPXOF	OCT	0
0102	00113	000000	LPBT1	BSS	1
0103*					
0104	00114	000000	LINUM	BSS	1
0105	00115	000000	LCCNT	BSS	1
0106	00116	000000	LBPNT	BSS	1
0107	00117	000000	LBSIR	BSS	1
0108	00120	000000	L0HED	BSS	1
0109	00121	000000	LBSAV	BSS	1
0110	00122	000000	L0GIN	BSS	1
0111	00123	000000	L0END	BSS	1
0112	00124	000000	LSTAT	BSS	1

LINE PRINTER SELECT CODE
LP TYPE: -1=2767 0=2778 1=2610
LP USER NUMBER
TEMPORARY LP SUSPENSION
TEMPORARY LP RELEASE
LINE PRINTER INITIALIZATION FLAG
LP ERROR REPORT FLAG
LP DOWN RETURN FLAG
LP DISCONNECT FLAG
LP X-OFF FLAG

0113 00125 000000 LCHAR BSS 1

0115*
0116** GENERAL USAGE CONSTANTS
0117*

0118	00126	175520	M1200	DEC	-1200	
0119	00127	177740	M32	DEC	-32	
0120	00130	177754		DEC	-20,-19,-18,-17,-16,-15,-14,-13,-12	
0121	00141	177765		DEC	-11,-10,-9,-8,-7,-6,-5,-4,-3,-2,-1	
0122	00154		.	EQU	*	
0123	00154	000000		DEC	0,1,2,3,4,5,6,7,8,9,10,11	
0124	00170	000014		DEC	12,13,14,15,16,17,18,19,20	
0125	00201	000210	M136	DEC	136	
0126	00202	077577	SYNCC	OCT	77577	SYNCHRONIZING CHARACTER
0127	00175		CNTLQ	EQU	+.21B	'CONTROL Q'
0128	00203	000027	CNTLW	OCT	27	'CONTROL W'
0129	00204	000030	CANCL	OCT	30	'CONTROL X'
0130	00205	000137	BKSPC	OCT	137	BACK SPACE
0131	00206	006412	CRLF	OCT	6412	CARRIAGE RETURN + LINE FEED
0132	00207	020134	RVRSL	ASC	1, \	
0133	00210	000007	B7	OCT	7	
0134	00211	000037	B37	OCT	37	
0135	00212	000060	LTLDL	OCT	60	LTBT+LDBT
0136	00213	000137	B137	OCT	137	
0137	00214	000177	B177	OCT	177	
0138	00215	000340	B340	OCT	340	
0139	00216	000377	B377	OCT	377	
0140	00217	002060	HLTLD	OCT	2060	
0141	00220	002560	PLDHE	OCT	2560	PDBT+LTBT+LDBT+HUBT+ENBT
0142	00221	017400	TRINT	OCT	17400	TRANSMIT INTERRUPT BITS
0143	00222	043400	DMASK	OCT	43400	
0144	00223	000064	CIRCD	OCT	64	"CIRCLE D" FOR SELECTRIC
0145	00224	043664	CRCLD	OCT	43664	
0146	00225	043774	CRCLC	OCT	43774	
0147	00226	071000	B71M	OCT	71000	
0148	00227	073470	KMASK	OCT	73470	
0149	00230	100077	PEJCT	OCT	100077	2778A PAGE EJECT CODE
0150	00231	160000	ICODE	OCT	160000	
0151	00232	160377	TMASK	OCT	160377	
0152	00233	174377	MASK1	OCT	174377	
0153	00234	177400	HIMSK	OCT	177400	
0154	00235	177501	M277	OCT	177501	==277B
0155	00236	177700	SCMSK	OCT	177700	
0156	00237	177770	MASK2	OCT	177770	
0157	00240	177740	.40	OCT	177740	
0158	00236		.100	EQU	SCMSK	
0159	00241	000000	ATEMP	BSS	1	
0160	00242	000000	CMA	BSS	1	
0161	00243	000000	CMB	BSS	1	
0162	00244	000000	CME	BSS	1	
0163	00245	000000	DSTP1	BSS	1	
0164	00246	000000	DSTP2	BSS	1	
0165	00247	000000	DSTS1	BSS	1	
0166	00250	000000	DSTS2	BSS	1	
0167	00251	000000	MTEMP	BSS	1	
0168	00252	000000	NPURT	BSS	1	

0169	00253	000000	PCHAR	BSS	1
0170	00254	000000	PHA1	BSS	1
0171	00255	000000	PHB1	BSS	1
0172	00256	000000	PHE1	BSS	1
0173	00257	000000	PHA2	BSS	1
0174	00260	000000	PHB2	BSS	1
0175	00261	000000	PHE2	BSS	1
0176	00262	000000	PHR	BSS	1
0177	00263	000000	PHM1	BSS	1
0178	00264	000000	PHM2	BSS	1
0179	00265	000000	PINUM	BSS	1
0180	00266	000000	RCODE	BSS	1
0181	00267	000000	STEMP	BSS	1
0182	00270	000000	TBGA	BSS	1
0183	00271	000000	TBGB	BSS	1
0184	00272	000000	TBGE	BSS	1
0185	00273	000000	TBGCN	BSS	1
0186	00274	000000	TEMP1	BSS	1
0187	00275	000000	TPONT	BSS	1
0188	00276	000000	TIYN	BSS	1
0189	00155		BIT0	EQU	+.1
0190	00156		BIT1	EQU	+.2
0191	00160		BIT2	EQU	+.4
0192	00164		BIT3	EQU	+.100
0193	00174		BIT4	EQU	+.200
0194	00277	000040	BIT5	OCT	000040
0195	00300	000100	BIT6	OCT	000100
0196	00301	000200	BIT7	OCT	000200
0197	00302	000400	BIT8	OCT	000400
0198	00303	001000	BIT9	OCT	001000
0199	00304	002000	BIT10	OCT	002000
0200	00305	004000	BIT11	OCT	004000
0201	00306	010000	BIT12	OCT	010000
0202	00307	020000	BIT13	OCT	200000
0203	00310	040000	BIT14	OCT	040000
0204	00311	100000	BIT15	OCT	100000
0205	00152		NBT0	EQU	.-2
0206	00151		NBT1	EQU	.-3
0207	00147		NBT2	EQU	.-5
0208	00143		NBT3	EQU	.-9
0209	00133		NBT4	EQU	.-210
0210	00312	177737	NBT5	OCT	177737
0211	00313	177677	NBT6	OCT	177677
0212	00314	177577	NBT7	OCT	177577
0213	00315	177377	NBT8	OCT	177377
0214	00316	176777	NBT9	OCT	176777
0215	00317	175777	NBT10	OCT	175777
0216	00320	173777	NBT11	OCT	173777
0217	00321	167777	NBT12	OCT	167777
0218	00322	157777	NBT13	OCT	157777
0219	00323	077777	NBT15	OCT	077777
0220	00176		BUFLN	EQU	126
0221	00306		EOBIT	EQU	BIT12
0222	00321		EFBIT	EQU	NBT12
0223	00321		NECHO	EQU	NBT12
0224	00301		SLBIT	EQU	BIT7

0225	00310		SYBIT	EQU	BIT14
0226	00324	006101	CTB2	DEF	CTBP2
0227	00325	004616	DSDR1	DEF	DS101
0228	00326	004737	DSDR2	DEF	DS201
0229	00327	005062	ICNV	DEF	ICNVR
0230	00330	006767	IDLEL	DEF	IDLE
0231	00331	003301	LDWR	DEF	LDWR
0232	00332	002755	LPIN	DEF	LPINT
0233	00333	002003	MUXXX	DEF	MUXX
0234	00334	077677	NIEBT	OCT	077677
0235	00335	157773	NDUBT	OCT	157773
0236	00336	005421	OCNV	DEF	OCNVR
0237	00337	007133	POW	DEF	POWF
0238	00340	002627	PMPXP	DEF	MPXEP
0239	00341	006302	TBGDR	DEF	TBGEN
0240	00342	004601	TKU.1	DEF	TKU1
0241	00343	004603	TKU.2	DEF	TKU2
0242	00344	004604	TKU.3	DEF	TKU3
0243	00345	000350	TTY	DEF	TTY00
0244	00346	000357	TTCC	DEF	TTY00+?CCNT
0245	00347	007711	TTYTP	DEF	TTPT
0246	00350	177404	MBLEN	ABS	=BUFLN-BUFLN
0247	00351	000374	BLN	ABS	BUFLN+BUFLN
0248	00352	177406	MAXBL	ABS	=BUFLN-BUFLN+2
0249	00353	001550	PRFS	DEF	RFS
0250	00354	001742	PMPXI	DEF	MPXI0
0251	00355	001764	PMPYI	DEF	MPYI0

0253*
 0254**
 0255***
 0256**
 0257*
 0258*
 0259*
 0260*
 0261*

TELETYPE TABLES

THE TELETYPE TABLES ARE LOCATED IN BASE PAGE AND CONTAIN INFORMATION ABOUT THE SYSTEM USERS. EACH OF THE 32 USERS HAS ONE TABLE CONTAINING THE FOLLOWING ENTRIES:

0263 00000 ?TNUM EQU 0
 0264* POKI NUMBER IN BITS 12-8

0266 00001 ?CCNT EQU ?TNUM+1
 0267* USED BY MPX FOR COUNTING OUTPUT CHARACTERS. IT
 0268* EQUALS -# OF CHARACTERS, INCLUDING CURRENT ONE.

0270 00002 ?BPNT EQU ?CCNT+1
 0271* ON INPUT - POINTS TO THE CHARACTER LOCATION INTO
 0272* WHICH THE NEXT CHARACTER WILL BE
 0273* DEPOSITED.
 0274* ON OUTPUT - POINTS TO THE LAST CHAR. TRANSMITTED.

0276 00003 ?BSTR EQU ?BPNT+1
 0277* ON INPUT - POINTS TO THE FIRST CHARACTER OF THE
 0278* MOST RECENT BUFFER.
 0279* ON OUTPUT - POINTS TO THE LOCATION INTO WHICH THE
 0280* NEXT CHARACTER WILL BE PLACED BY THE
 0281* OUTCR ROUTINE.

0283 00004 ?BHED EQU ?BSTR+1
 0284* ON INPUT - POINTS TO THE NEXT CHARACTER TO BE
 0285* FETCHED.

0287 00005 ?BSAV EQU ?BHED+1
 0288* SAVED BUFFER PICKUP POINTER.

0290 00006 ?BGIN EQU ?BSAV+1
 0291* POINTS TO BEGINNING OF PHYSICAL BUFFER

0293 00007 ?BEND EQU ?BGIN+1
 0294* POINTS TO FIRST CHARACTER FOLLOWING PHYSICAL
 0295* BUFFER.

0297	00010	?STAT EQU ?BEND+1	
0299	00155	TPBT EQU BIT0	USER IS IN TAPE MODE
0300	00152	TPNBT EQU NBT0	
0301	00156	STBT EQU BIT1	USER WAS TURNED OFF
0302	00151	STNBT EQU NBT1	
0303	00160	CXBT EQU BIT2	'CONTROL X' WAS HIT
0304	00164	IUBT EQU BIT3	USER IS IN INPUT MODE
0305	00143	IONBT EQU NBT3	
0306	00174	LDBT EQU BIT4	LINE DROPOUT OCCURRED
0307	00133	LDNBT EQU NBT4	
0308	00277	LTBT EQU BIT5	WAIT FOR LOG TIMING
0309	00312	LINBT EQU NBT5	
0310	00300	ENBT EQU BIT6	TIMING FOR <ENTER>
0311	00313	ENNBT EQU NBT6	
0312	00301	RNBT EQU BIT7	USER IS RUNNING
0313	00314	RNNBT EQU NBT7	
0314	00302	PDBT EQU BIT8	PHONE DISCONNECTED
0315	00303	NIBT EQU BIT9	NO INPUT ALLOWED
0316	00316	NINBT EQU NBT9	
0317	00304	HUBT EQU BIT10	HANG USER UP
0318	00305	XOBT EQU BIT11	X-OFF WAS READ FROM TERMINET
0319	00320	XONBT EQU NBT11	
0320*		STYP2 EQU BIT12	*
0321*		STYP3 EQU BIT13	*
0322*		STYP4 EQU BIT13	** TELETYPE SUBTYPES
0323*		STYP5 EQU BIT14	*
0324*		STYP6 EQU BIT14	*
0325	00311	ICBT EQU BIT15	INPUT CONFIGURATION NEEDED
0326	00323	ICNBT EQU NBT15	
0328	00011	?ATIM EQU ?STAT+1	
0329*		CONTAINS ALLOWED TIME FOR <ENTER STATEMENT>	
0330*		EXECUTION.	
0332	00012	?TIMO EQU ?ATIM+1	
0333*		TIMEOUT VALUE FOR USER EXECUTING <ENTER	
0334*		STATEMENT>.	
0336	00013	?PHON EQU ?TIMO+1	
0337*		USED AS TIME COUNTER FOR PHONES LOGIC.	

0339 00014 ?TYPE EQU ?PHON+1
 0340* TERMINAL TYPE: ASCII #0
 0341*
 0342* EBCD BIT0 #0
 0343* BIT15#1
 0344*
 0345* CALL/360 BIT0 #1
 0346* BIT15#0
 0347*
 0348* FOR EBCD & CALL/360 TERMINAL:

0350 00150 CDBT EQU BIT1 CODE DETERMINED
 0351 00160 UCBT EQU BIT2 UPPER CASE MODE
 0352 00147 UCNBT EQU NBT2
 0353 00164 CNBT EQU BIT3 "CENT" CHARACTER
 0354 00143 CNNBT EQU NBT3
 0355 00174 CCBT EQU BIT4 "CENTC" CHARACTER
 0356 00277 CRBT EQU BIT5 "CR" BIT(OUTPUT ONLY)
 0357 00312 CRNBT EQU NBT5
 0358 00300 XBIT EQU BIT6 "CONTROL X" WAS INPUT
 0359 00313 XNBIT EQU NBT6
 0360 00301 CBBT EQU BIT7 "CIRCLE C" WAS SENT
 0361 00314 CBNBT EQU NBT7
 0362* BIT8 CIRCLE D *
 0363* BIT9 SYNC * TRANSMIT
 0364* BIT10 SPACE ** INTERRUPT
 0365* BIT11 SPACE * BITS
 0366* BIT12 SPACE *
 0367 00307 DIBT EQU BIT13 "CIRCLE D" WAS RECEIVED

0369 00015 ?CDLY EQU ?TYPE+1
 0370* CARRIAGE RETURN DELAY (NEGATIVE).

0372 00016 ?LDLY EQU ?CDLY+1
 0373* LINE FEED DELAY (NEGATIVE).

0375 00017 ?DCNT EQU ?LDLY+1
 0376* CR AND LF DELAY COUNTER.

0378 00020 ?SCNT EQU ?DCNT+1
 0379* CHARACTER COUNTER USED FOR DETERMINING CARRIAGE
 0380* RETURN DELAYS.

0382 00021 ?RPRM EQU ?SCNT+1
 0383* RECEIVE CHANNEL PARAMETERS.

0385 00022 ?SPRM EQU ?RPRM+1
 0386* SEND CHANNEL PARAMETERS.

0388 00023 ?PPRM EQU ?SPRM+1
 0389* PHONE PARAMETER.

0391	00356	000000	TTY00	OCT	0,0
0392				REP	5
0393	00360	017722		DEF	BUF00+BUF00
0393	00361	017722		DEF	BUF00+BUF00
0393	00362	017722		DEF	BUF00+BUF00
0393	00363	017722		DEF	BUF00+BUF00
0393	00364	017722		DEF	BUF00+BUF00
0394	00365	020310		DEF	BUF00+BUF00+BUFLN+BUFLN
0395	00366	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0396*					
0397	00402	000400	TTY01	OCT	400,0
0398				REP	5
0399	00404	020316		DEF	BUF01+BUF01
0399	00405	020316		DEF	BUF01+BUF01
0399	00406	020316		DEF	BUF01+BUF01
0399	00407	020316		DEF	BUF01+BUF01
0399	00410	020316		DEF	BUF01+BUF01
0400	00411	020712		DEF	BUF01+BUF01+BUFLN+BUFLN
0401	00412	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0402*					
0403	00426	001000	TTY02	OCT	1000,0
0404				REP	5
0405	00430	020712		DEF	BUF02+BUF02
0405	00431	020712		DEF	BUF02+BUF02
0405	00432	020712		DEF	BUF02+BUF02
0405	00433	020712		DEF	BUF02+BUF02
0405	00434	020712		DEF	BUF02+BUF02
0406	00435	021306		DEF	BUF02+BUF02+BUFLN+BUFLN
0407	00436	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0408*					
0409	00452	001400	TTY03	OCT	1400,0
0410				REP	5
0411	00454	021306		DEF	BUF03+BUF03
0411	00455	021306		DEF	BUF03+BUF03
0411	00456	021306		DEF	BUF03+BUF03
0411	00457	021306		DEF	BUF03+BUF03
0411	00460	021306		DEF	BUF03+BUF03
0412	00461	021702		DEF	BUF03+BUF03+BUFLN+BUFLN
0413	00462	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0414*					
0415	00476	002000	TTY04	OCT	2000,0
0416				REP	5
0417	00500	021702		DEF	BUF04+BUF04
0417	00501	021702		DEF	BUF04+BUF04
0417	00502	021702		DEF	BUF04+BUF04
0417	00503	021702		DEF	BUF04+BUF04
0417	00504	021702		DEF	BUF04+BUF04
0418	00505	022276		DEF	BUF04+BUF04+BUFLN+BUFLN
0419	00506	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0420*					
0421	00522	002400	TTY05	OCT	2400,0
0422				REP	5
0423	00524	022276		DEF	BUF05+BUF05
0423	00525	022276		DEF	BUF05+BUF05
0423	00526	022276		DEF	BUF05+BUF05
0423	00527	022276		DEF	BUF05+BUF05

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0423	00530	022270		DEF	BUF05+BUF05
0424	00531	022672		DEF	BUF05+BUF05+BUFLN+BUFLN
0425	00532	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0426*					
0427	00546	003000	TTY06	UCT	3000,0
0428				REP	5
0429	00550	022672		DEF	BUF06+BUF06
0429	00551	022672		DEF	BUF06+BUF06
0429	00552	022672		DEF	BUF06+BUF06
0429	00553	022672		DEF	BUF06+BUF06
0429	00554	022672		DEF	BUF06+BUF06
0430	00555	023266		DEF	BUF06+BUF06+BUFLN+BUFLN
0431	00556	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0432*					
0433	00572	003400	TTY07	UCT	3400,0
0434				REP	5
0435	00574	023266		DEF	BUF07+BUF07
0435	00575	023266		DEF	BUF07+BUF07
0435	00576	023266		DEF	BUF07+BUF07
0435	00577	023266		DEF	BUF07+BUF07
0435	00600	023266		DEF	BUF07+BUF07
0436	00601	023662		DEF	BUF07+BUF07+BUFLN+BUFLN
0437	00602	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0438*					
0439	00616	004000	TTY10	UCT	4000,0
0440				REP	5
0441	00620	023662		DEF	BUF10+BUF10
0441	00621	023662		DEF	BUF10+BUF10
0441	00622	023662		DEF	BUF10+BUF10
0441	00623	023662		DEF	BUF10+BUF10
0441	00624	023662		DEF	BUF10+BUF10
0442	00625	024256		DEF	BUF10+BUF10+BUFLN+BUFLN
0443	00626	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0444*					
0445	00642	004400	TTY11	UCT	4400,0
0446				REP	5
0447	00644	024256		DEF	BUF11+BUF11
0447	00645	024256		DEF	BUF11+BUF11
0447	00646	024256		DEF	BUF11+BUF11
0447	00647	024256		DEF	BUF11+BUF11
0447	00650	024256		DEF	BUF11+BUF11
0448	00651	024652		DEF	BUF11+BUF11+BUFLN+BUFLN
0449	00652	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0450*					
0451	00666	005000	TTY12	UCT	5000,0
0452				REP	5
0453	00670	024652		DEF	BUF12+BUF12
0453	00671	024652		DEF	BUF12+BUF12
0453	00672	024652		DEF	BUF12+BUF12
0453	00673	024652		DEF	BUF12+BUF12
0453	00674	024652		DEF	BUF12+BUF12
0454	00675	025246		DEF	BUF12+BUF12+BUFLN+BUFLN
0455	00676	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0456*					
0457	00712	005400	TTY13	UCT	5400,0
0458				REP	5

0459	00714	025246		DEF	BUF13+BUF13
0459	00715	025246		DEF	BUF13+BUF13
0459	00716	025246		DEF	BUF13+BUF13
0459	00717	025246		DEF	BUF13+BUF13
0459	00720	025246		DEF	BUF13+BUF13
0460	00721	025642		DEF	BUF13+BUF13+BUFLN+BUFLN
0461	00722	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0462*					
0463	00736	006000	TTY14	OCT	6000,0
0464				REP	5
0465	00740	025642		DEF	BUF14+BUF14
0465	00741	025642		DEF	BUF14+BUF14
0465	00742	025642		DEF	BUF14+BUF14
0465	00743	025642		DEF	BUF14+BUF14
0465	00744	025642		DEF	BUF14+BUF14
0466	00745	026236		DEF	BUF14+BUF14+BUFLN+BUFLN
0467	00746	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0468*					
0469	00762	006400	TTY15	OCT	6400,0
0470				REP	5
0471	00764	026236		DEF	BUF15+BUF15
0471	00765	026236		DEF	BUF15+BUF15
0471	00766	026236		DEF	BUF15+BUF15
0471	00767	026236		DEF	BUF15+BUF15
0471	00770	026236		DEF	BUF15+BUF15
0472	00771	026632		DEF	BUF15+BUF15+BUFLN+BUFLN
0473	00772	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0474*					
0475	01006	007000	TTY16	OCT	7000,0
0476				REP	5
0477	01010	026632		DEF	BUF16+BUF16
0477	01011	026632		DEF	BUF16+BUF16
0477	01012	026632		DEF	BUF16+BUF16
0477	01013	026632		DEF	BUF16+BUF16
0477	01014	026632		DEF	BUF16+BUF16
0478	01015	027226		DEF	BUF16+BUF16+BUFLN+BUFLN
0479	01016	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0480*					
0481	01032	007400	TTY17	OCT	7400,0
0482				REP	5
0483	01034	027226		DEF	BUF17+BUF17
0483	01035	027226		DEF	BUF17+BUF17
0483	01036	027226		DEF	BUF17+BUF17
0483	01037	027226		DEF	BUF17+BUF17
0483	01040	027226		DEF	BUF17+BUF17
0484	01041	027622		DEF	BUF17+BUF17+BUFLN+BUFLN
0485	01042	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0486*					
0487	01056	010000	TTY20	OCT	10000,0
0488				REP	5
0489	01060	027622		DEF	BUF20+BUF20
0489	01061	027622		DEF	BUF20+BUF20
0489	01062	027622		DEF	BUF20+BUF20
0489	01063	027622		DEF	BUF20+BUF20
0489	01064	027622		DEF	BUF20+BUF20
0490	01065	030216		DEF	BUF20+BUF20+BUFLN+BUFLN

0491	01066	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0492*					
0493	01102	010400	TTY21	UCT	10400,0
0494				REP	5
0495	01104	030216		DEF	BUF21+BUF21
0495	01105	030216		DEF	BUF21+BUF21
0495	01106	030216		DEF	BUF21+BUF21
0495	01107	030216		DEF	BUF21+BUF21
0495	01110	030216		DEF	BUF21+BUF21
0496	01111	030612		DEF	BUF21+BUF21+BUFLN+BUFLN
0497	01112	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0498*					
0499	01126	011000	TTY22	UCT	11000,0
0500				REP	5
0501	01130	030612		DEF	BUF22+BUF22
0501	01131	030612		DEF	BUF22+BUF22
0501	01132	030612		DEF	BUF22+BUF22
0501	01133	030612		DEF	BUF22+BUF22
0501	01134	030612		DEF	BUF22+BUF22
0502	01135	031206		DEF	BUF22+BUF22+BUFLN+BUFLN
0503	01130	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0504*					
0505	01152	011400	TTY23	UCT	11400,0
0506				REP	5
0507	01154	031206		DEF	BUF23+BUF23
0507	01155	031206		DEF	BUF23+BUF23
0507	01156	031206		DEF	BUF23+BUF23
0507	01157	031206		DEF	BUF23+BUF23
0507	01160	031206		DEF	BUF23+BUF23
0508	01161	031602		DEF	BUF23+BUF23+BUFLN+BUFLN
0509	01162	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0510*					
0511	01176	012000	TTY24	UCT	12000,0
0512				REP	5
0513	01200	031602		DEF	BUF24+BUF24
0513	01201	031602		DEF	BUF24+BUF24
0513	01202	031602		DEF	BUF24+BUF24
0513	01203	031602		DEF	BUF24+BUF24
0513	01204	031602		DEF	BUF24+BUF24
0514	01205	032170		DEF	BUF24+BUF24+BUFLN+BUFLN
0515	01206	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0516*					
0517	01222	012400	TTY25	UCT	12400,0
0518				REP	5
0519	01224	032170		DEF	BUF25+BUF25
0519	01225	032170		DEF	BUF25+BUF25
0519	01226	032170		DEF	BUF25+BUF25
0519	01227	032170		DEF	BUF25+BUF25
0519	01230	032170		DEF	BUF25+BUF25
0520	01231	032572		DEF	BUF25+BUF25+BUFLN+BUFLN
0521	01232	000000		UCT	0,0,0,0,0,0,0,0,0,0,0,0
0522*					
0523	01246	013000	TTY26	UCT	13000,0
0524				REP	5
0525	01250	032572		DEF	BUF26+BUF26
0525	01251	032572		DEF	BUF26+BUF26

0525	01252	032572		DEF	BUF26+BUF26
0525	01253	032572		DEF	BUF26+BUF26
0525	01254	032572		DEF	BUF26+BUF26
0526	01255	033166		DEF	BUF26+BUF26+BUFLN+BUFLN
0527	01256	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0528*					
0529	01272	013400	TTY27	OCT	13400,0
0530				REP	5
0531	01274	033166		DEF	BUF27+BUF27
0531	01275	033166		DEF	BUF27+BUF27
0531	01276	033166		DEF	BUF27+BUF27
0531	01277	033166		DEF	BUF27+BUF27
0531	01300	033166		DEF	BUF27+BUF27
0532	01301	033562		DEF	BUF27+BUF27+BUFLN+BUFLN
0533	01302	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0534*					
0535	01316	014000	TTY30	OCT	14000,0
0536				REP	5
0537	01320	033562		DEF	BUF30+BUF30
0537	01321	033562		DEF	BUF30+BUF30
0537	01322	033562		DEF	BUF30+BUF30
0537	01323	033562		DEF	BUF30+BUF30
0537	01324	033562		DEF	BUF30+BUF30
0538	01325	034156		DEF	BUF30+BUF30+BUFLN+BUFLN
0539	01326	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0540*					
0541	01342	014400	TTY31	OCT	14400,0
0542				REP	5
0543	01344	034156		DEF	BUF31+BUF31
0543	01345	034156		DEF	BUF31+BUF31
0543	01346	034156		DEF	BUF31+BUF31
0543	01347	034156		DEF	BUF31+BUF31
0543	01350	034156		DEF	BUF31+BUF31
0544	01351	034552		DEF	BUF31+BUF31+BUFLN+BUFLN
0545	01352	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0546*					
0547	01366	015000	TTY32	OCT	15000,0
0548				REP	5
0549	01370	034552		DEF	BUF32+BUF32
0549	01371	034552		DEF	BUF32+BUF32
0549	01372	034552		DEF	BUF32+BUF32
0549	01373	034552		DEF	BUF32+BUF32
0549	01374	034552		DEF	BUF32+BUF32
0550	01375	035146		DEF	BUF32+BUF32+BUFLN+BUFLN
0551	01376	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0552*					
0553	01412	015400	TTY33	OCT	15400,0
0554				REP	5
0555	01414	035146		DEF	BUF33+BUF33
0555	01415	035146		DEF	BUF33+BUF33
0555	01416	035146		DEF	BUF33+BUF33
0555	01417	035146		DEF	BUF33+BUF33
0555	01420	035146		DEF	BUF33+BUF33
0556	01421	035542		DEF	BUF33+BUF33+BUFLN+BUFLN
0557	01422	000000		OCT	0,0,0,0,0,0,0,0,0,0,0
0558*					

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0559	01436	016000	TTY34	OCT	16000,0
0560				REP	5
0561	01440	035542		DEF	BUF34+BUF34
0561	01441	035542		DEF	BUF34+BUF34
0561	01442	035542		DEF	BUF34+BUF34
0561	01443	035542		DEF	BUF34+BUF34
0561	01444	035542		DEF	BUF34+BUF34
0562	01445	036136		DEF	BUF34+BUF34+BUFLN+BUFLN
0563	01446	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0564*					
0565	01462	016400	TTY35	OCT	16400,0
0566				REP	5
0567	01464	036136		DEF	BUF35+BUF35
0567	01465	036136		DEF	BUF35+BUF35
0567	01466	036136		DEF	BUF35+BUF35
0567	01467	036136		DEF	BUF35+BUF35
0567	01470	036136		DEF	BUF35+BUF35
0568	01471	036532		DEF	BUF35+BUF35+BUFLN+BUFLN
0569	01472	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0570*					
0571	01506	017000	TTY36	OCT	17000,0
0572				REP	5
0573	01510	036532		DEF	BUF36+BUF36
0573	01511	036532		DEF	BUF36+BUF36
0573	01512	036532		DEF	BUF36+BUF36
0573	01513	036532		DEF	BUF36+BUF36
0573	01514	036532		DEF	BUF36+BUF36
0574	01515	037120		DEF	BUF36+BUF36+BUFLN+BUFLN
0575	01516	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0576*					
0577	01532	017400	TTY37	OCT	17400,0
0578				REP	5
0579	01534	037120		DEF	BUF37+BUF37
0579	01535	037120		DEF	BUF37+BUF37
0579	01536	037120		DEF	BUF37+BUF37
0579	01537	037120		DEF	BUF37+BUF37
0579	01540	037120		DEF	BUF37+BUF37
0580	01541	037522		DEF	BUF37+BUF37+BUFLN+BUFLN
0581	01542	000000		OCT	0,0,0,0,0,0,0,0,0,0,0,0
0582*					
0583	01556		BSS	0	

END OF TELETYPE TABLES

0585*
 0586**
 0587***
 0588**
 0589*

REQUEST FOR SERVICE

0590* THIS ROUTINE DECODES REQUESTS FOR SERVICE FROM THE SYSTEM
 0591* PROCESSOR AND THEN CALLS ON THE PROPER SERVICE ROUTINE FOR
 0592* PROCESSING.

0593*
 0594 01556 000000 RFS NOP
 0595 01557 070242 SIA CMA S A,
 0596 01560 074243 STB CMB A B,
 0597 01561 001500 ERA V AND
 0598 01562 070244 STA CME E E
 0599 01563 102510 LIA C1 LOAD REQUEST CODE
 0600 01564 070266 STA RCODE AND SAVE IT
 0601 01565 001727 ALF,ALF MOVE TTY# TO RIGHT END
 0602 01566 010211 AND B37 MASK TO 5 BITS
 0603 01567 040347 ADA TTYTP ADD TTY TABLE POINTER
 0604 01570 164000 LDB A,I B = TTY TABLE ADDRESS
 0605 01571 060266 LDA RCODE LOAD REQUEST WORD, MOVE REQUEST
 0606 01572 001765 ALF,CLE,ERA CODE TO RIGHT 3 BITS, AND MASK
 0607 01573 010210 AND B7 IT (E = 1 FOR UPPER 16 TTYS)
 0608 01574 041577 AUA DIPNT AND ON DECODE TABLE POINTER
 0609 01575 103100 CLF 0
 0610 01576 124000 JMP A,I CALL SERVICE ROUTINE

0611*
 0612* DECODE TABLE

0613*
 0614 01577 101600 DTPNT DEF ++1,I DECODE TABLE POINTER
 0615 01600 003342 DEF POC 0 = PROCESS OUTPUT CHARACTER
 0616 01601 004031 DEF STE 1 = START ENTER TIMING
 0617 01602 004052 DEF FNC 2 = FETCH NEXT CHARACTER
 0618 01603 004072 DEF PHS 3 = PHONES TIMING
 0619 01604 004103 DEF SPE 4 = BAUD RATE
 0620 01605 004141 DEF SBP 5 = SAVE BUFFER POINTER
 0621 01606 004146 DEF RBP 6 = RESTORE BUFFER POINTER
 0622 01607 001610 DEF MIKRO 7 = CODED

0623*
 0624** PROCESS MIKRO-CODED REQUEST

0625*
 0626 01610 MIKRO EQU *
 0627 01610 060266 LDA RCODE LOAD REQUEST WORD
 0628 01611 010211 AND B37 MASK TO 5 BITS
 0629 01612 041614 AUA MTPNT ADD ON MIKRO-DECODE TABLE POINTER
 0630 01613 124000 JMP A,I CALL SERVICE ROUTINE

0631*
 0632* MIKRO-DECODE TABLE

0633*
 0634 01614 101615 MTPNT DEF ++1,I MIKRO-DECODE TABLE POINTER
 0635 01615 STUP EQU *
 0636 01615 006547 DEF INIF 0 = INITIALIZE THE I/O SYSTEM
 0637 01616 004153 DEF UIR 1 = USER IS RUNNING
 0638 01617 004160 DEF UNR 2 = USER NOT RUNNING
 0639 01620 004173 DEF IWT 3 = INPUT WAIT
 0640 01621 004214 DEF HUU 4 = HANG USER UP

0641	01622	004222	DEF	ULO	5	STOP AUTO-DISCONNECT TIMING
0642	01623	004235	DEF	ECU	6	ECHO ON
0643	01624	004242	DEF	ECF	7	ECHO OFF
0644	01625	004247	DEF	TPU	10	TAPE MODE ON
0645	01626	004254	DEF	ILI	11	ILLEGAL INPUT - TAPE MODE
0646	01627	004272	DEF	NUC	12	NEW USER CALLED
0647	01630	004302	DEF	KAU	13	KILL ALL OUTPUT
0648	01631	004312	DEF	ALI	14	ALLOW INPUT
0649	01632	004330	DEF	OWT	15	OUTPUT WAIT
0650	01633	004347	DEF	IBF	16	IS BUFFER FULL?
0651	01634	003540	DEF	PSC	17	LINE PRINTER SELECT CODE
0652	01635	003614	DEF	LPR	20	LINE PRINTER REQUEST
0653	01636	004013	LPDJM DEF	LPD	21	LINE PRINTER DISCONNECT
0654	01637	004016	DEF	LPS	22	LINE PRINTER STATUS
0655	01640	004357	DEF	BKS	23	BACKSPACE
0656	01641	004370	DEF	CHS	24	CHARACTER SIZE INFORMATION
0657	01642	004423	DEF	STP	25	SUBTYPE INFORMATION
0658	01643	004552	DEF	WSP	26	WHAT BAUD RATE?
0659	01644	004557	DEF	WCS	27	WHAT CHARACTER SIZE?
0660	01645	004565	DEF	WTP	30	WHAT TERMINAL TYPE?
0661	01646	004571	DEF	TKO	31	TELEKLUDGE OUTPUT
0662	01647	003765	DEF	ABT	32	USER ABORTED
0663	01650	001653	DEF	SRRTN	33	
0664	01651	001670	IUMTM DEF	OMIOM		
0665	01652	001713	IMUXR DEF	MUXOR		

0666/*
 0668**
 0669*

SERVICE REQUEST RETURN POINT

0670	01653		SRRTN	EQU *	
0671	01653	102100	SIF	0	
0672	01654	004244	LDB	CME	RESTORE
0673	01655	005600	ELB		E,
0674	01656	000242	LDA	CMA	A,
0675	01657	004243	LDB	CMB	AND B
0676	01660	103710	STC	C1,C	ACKNOWLEDGE RECEIPT
0677	01661	125556	JMP	RFS,I	RETURN
0678	01662		RFSE	EQU *	

0680*
 0681**
 0682***
 0683**
 0684*
 0685*
 0686*
 0687*
 0688*
 0689*

OUTPUT MESSAGE TO OTHER MACHINE

THIS ROUTINE HANDLES I/O PROCESSOR MESSAGES TO THE SYSTEM
 PROCESSOR AND CHECKS FOR THE SPECIAL CONDITION OF SYSTEM
 RESTART. THE FOLLOWING ARE CODES FOR THE I/O PROCESSOR
 MESSAGES:

0691	01662	000000	HVL	OCT	000000	HAVE A COMPLETE LINE
0692	01663	020000	ABR	OCT	020000	USER'S ABORT REQUEST
0693	01664	040000	BFL	OCT	040000	BUFFER IS FULL
0694	01665	060000	BFE	OCT	060000	BUFFER IS EMPTY
0695	01666	100000	ETO	OCT	100000	ENTER STATEMENT TIMED OUT
0696	01667	120000	UHU	OCT	120000	USER HUNG UP

0698*
 0699**
 0700*

OUTPUT MESSAGE

0701	01670	000000	DMTOM	NOP		
0702	01671	103100		CLF	0	
0703	01672	070251		STA	MTEMP	SAVE A-REGISTER
0704	01673		RLP	EQU	*	WAIT FOR ACKNOWLEDGEMENT
0705	01673	102311		SFS	C2	OF PREVIOUS TRANSMISSION
0706	01674	025702		JMP	SINIT	CHECK FOR STARTUP
0707	01675	102611		OTA	C2	OUTPUT MESSAGE CODE
0708	01676	103711		SIC	C2,C	INTERRUPT OTHER MACHINE
0709	01677	106711		CLC	C2	WE WANT NO INTERRUPT
0710	01700	102100		SIF	0	
0711	01701	125670		JMP	DMTOM,I	

0712*
 0713**
 0714*

CHECK FOR SYSTEM STARTUP

0715	01702		SINIT	EQU	*	
0716	01702	102310		SFS	C1	CHECK FOR COMMUNICATIONS
0717	01703	025673		JMP	RLP	NONE - WAIT FOR RESPONSE
0718	01704	102510		LIA	C1	GET INPUT WORD
0719	01705	070266		STA	RCODE	AND SAVE IT
0720	01706	010232		AND	TMASK	MASK OUT TTY# FIELD
0721	01707	050231		CPA	ICODE	CHECK FOR RESTART.
0722	01710	125615		JMP	STUP,I	YES - CALL STARTUP ROUTINE
0723	01711	060251		LDA	MTEMP	NO - RESTORE A
0724	01712	025673		JMP	RLP	

0726*

0727**

0728*** MULTIPLEXER OUTPUT ROUTINE

0729**

0730*

0731* THIS ROUTINE HANDLES ALL OUTPUT TO BOTH MULTIPLEXER BOARDS.

0732* THE FORMAT IS AS FOLLOWS:

0733* A REGISTER = DATA

0734* B REGISTER = UNIT NUMBER

0735*

0736	01713	000000	MUXOR	NOP	
0737	01714	103100		CLF 0	STOP INTERRUPTS
0738	01715	070241		SIA ATEMP	SAVE A
0739	01716	005765		BLF,CLE,ERB	POSITION
0740	01717	005300		RBR	UNIT NUMBER
0741	01720	002040		SEZ	FIRST BOARD?
0742	01721	025732		JMP MUXOY	NO

0744*

0745** FIRST MUX BOARD

0746*

0747	01722	102514		LIA MPX+1	WAIT FOR
0748	01723	002020		SSA	SEEKING BIT
0749	01724	025722		JMP *-2	TO CLEAR
0750	01725	000241		LDA ATEMP	RESTORE A
0751	01726	102613		OTA MPX	OUTPUT DATA
0752	01727	106614		OTB MPX+1	AND UNIT NUMBER
0753	01730	102713		STC MPX	
0754	01731	125713		JMP MUXOR,1	RETURN

0756*

0757** SECOND MUX BOARD

0758*

0759	01732	102517	MUXOY	LIA MPY+1	WAIT FOR
0760	01733	002020		SSA	SEEKING BIT
0761	01734	025732		JMP *-2	TO CLEAR
0762	01735	060241		LDA ATEMP	RESTORE A
0763	01736	102616		UTA MPY	OUTPUT DATA
0764	01737	106617		OTB MPY+1	AND UNIT NUMBER
0765	01740	102716		STC MPY	
0766	01741	125713		JMP MUXOR,1	RETURN
0767	01742		MUXRE	EQU *	

0002*
 0003**
 0004**
 0005**
 0006*

INTERRUPT ROUTINE FOR FIRST MULTIPLEXER

0007	01742	000000	MPXIO	NOP	
0008	01743	070062		STA MPXA	S A,
0009	01744	074063		STB MPXB	A B,
0010	01745	005500		ERB	V AND
0011	01746	074064		STB MPXE	E E
0012	01747	102513		LIA MPX	GET MPX
0013	01750	070073		STA MPXLC	STATUS
0014	01751	102514		LIA MPX+1	AND
0015	01752	070075		STA MPXUC	SAVE IT
0016	01753	060100		LDA YFLAG	IS Y=MULTIPLEXER FLAG SET?
0017	01754	002003		SZA,RSS	
0018	01755	124333		JMP MUXXX,I	NO - CONTINUE
0019	01756	070077		STA XFLAG	YES - SET X=MULTIPLEXER FLAG
0020	01757	060064		LDA MPXE	RESTORE
0021	01760	001000		ELA	E,
0022	01761	060062		LDA MPXA	A,
0023	01762	064063		LDB MPXB	AND B
0024	01763	125742		JMP MPXIO,I	RETURN

0026*
 0027**
 0028**
 0029**
 0030*

INTERRUPT ROUTINE FOR SECOND MULTIPLEXER

0031	01764	000000	MPYIO	NOP	
0032	01765	103100		CLF 0	
0033	01766	070065		STA MPYA	S A,
0034	01767	074066		STB MPYB	A B,
0035	01770	005500		ERB	V AND
0036	01771	074067		STB MPYE	E E
0037	01772	102516		LIA MPY	
0038	01773	070074		STA LOWER	GET MPY STATUS,
0039	01774	102517		LIA MPY+1	CONVERT TTY# TO
0040	01775	030310		IOR SYBIT	UPPER 16 TTYS,
0041	01776	070076		STA UPPER	AND SAVE THEM
0042	01777	006404		CLB,INB	
0043	02000	074100		STB YFLAG	SET Y=MULTIPLEXER FLAG
0044	02001	102100		STF 0	
0045	02002	026007		JMP MUXY	

0047*
 0048**
 0049*

DRIVER INITIALIZATION

0050	02003	060073	MUXX	LDA MPXLC	SET
0051	02004	070074		STA LOWER	STATUS
0052	02005	060075		LDA MPXUC	VARIABLES
0053	02006	070076		STA UPPER	
0054	02007	001700	MUXY	ALF	MOVE TTY# TO

0055	02010	001222	RAL,RAL	RIGHT END AND
0056	02011	010211	AND B37	MASK TO 5 BITS
0057	02012	040347	ADA TTYTP	ADD ON TTY TABLE POINTER
0058	02013	164000	LDB A,I	B => TTY#
0059	02014	074045	STB XTNUM	SAVE
0060	02015	060076	LDA UPPER	GET THE STATUS
0061	02016	001323	RAR,RAR	AND TEST FOR
0062	02017	000010	SLA	ATTEMPTED ABORT
0063	02020	026374	JMP ABURT	YES = GO TO ABORT LOGIC
0064	02021	060076	LDA UPPER	NO = GET STATUS AND
0065	02022	000010	SLA	TEST FOR INPUT
0066	02023	026411	JMP MPXUP	NO GO TO OUTPUT LOGIC
0067	02024	044164	→ ADB .+?STAT	GET USER'S
0068	02025	160001	LDA B,I	STATUS
0069	02026	010303	AND NIBT	IS INPUT ALLOWED?
0070	02027	002003	SZA,RSS	
0071	02030	020053	- JMP INPTX	YES.
0072	02031	044160	- ADB .+?TYPE-?STAT	NO, SELECTRIC?
0073	02032	160001	LDA B,I	
0074	02033	002003	SZA,RSS	
0075	02034	026627	JMP MPXEP	NO, IGNORE.
0076	02035	060074	LDA LOWER	YES, GET DATA.
0077	02036	010214	AND B177	MASK DATA BITS.
0078	02037	050223	CPA CIRCD	CHAR. = CIRCLE D?
0079	02040	002001	RSS	
0080	02041	026627	- JMP MPXEP	NO, IGNORE.
0081	02042	160001	LDA B,I	YES, A = ?TYPE
0082	02043	044140	ADB .-?TYPE	B => ?TNUM
0083	02044	030221	IOR TRINT	SET UP FOR TRANSMIT
0084	02045	054103	CPB LPTTY	INTERRUPT.
0085	02046	010315	AND NBTB	IF USER HAS LP
0086	02047	010147	AND UCNBT	RESET BIT.
0087	02050	044170	ADB .+?TYPE	RESET UPPER CASE BIT.
0088	02051	170001	STA B,I	
0089	02052	026627	JMP MPXEP	GET OUT.

0091*

0092**

0093*** RECEIVE CHANNEL PROCESSING

0094**

0095*

```

0096 02053          INPTX EQU *
0097 02053 044140   ADB  ,+?BPNT=?STAT  B => RUNNING BUFFER POINTER
0098 02054 074047   STB  XBPNT
0099 02055 006004   INB                      B => START OF BUFFER
0100 02056 074050   STB  XBSTR
0101 02057 006004   INB                      B => START OF FIRST BUFFER
0102 02060 074051   STB  XBHED
0103 02061 006004   INB                      B => SAVED BUFFER POINTER
0104 02062 074052   STB  XBSAV
0105 02063 006004   INB                      B => START OF PHYSICAL BUFFER
0106 02064 074053   STB  XBGIN
0107 02065 006004   INB                      B => END OF PHYSICAL BUFFER
0108 02066 074054   STB  XBEND
0109 02067 006004   INB                      B => STATUS
0110 02070 074055   STB  XSTAT
0111 02071 006004   INB                      B => ALLOWED TIME
0112 02072 074056   STB  XATIM
0113 02073 006074   LDA  LOWER              GET DATA WORD
0114 02074 010214   AND  B177              MASK DATA BITS
0115 02075 044157   ADB  ,+?TYPE=?ATIM
0116 02076 074057   STB  XTYPE             B => TERMINAL TYPE
0117 02077 164001   LDB  B,I              B = TERMINAL TYPE
0118 02100 006002   SZB                      DO A CODE CONVERSION IF
0119 02101 114327   JSB  ICNV,I           TERMINAL IS A SELECTRIC
0120 02102 070070   STA  XCHAR
0121 02103 064000   LDB  A                B = CHARACTER
0122 02104 160055   LDA  XSTAT,I         A = STATUS
0123 02105 010305   AND  X0BT           CHECK FOR X-OFF BIT
0124 02106 002002   SZA
0125 02107 026114   JMP  INPX           YES
0126 02110 160055   LDA  XSTAT,I         A = STATUS
0127 02111 010160   AND  CXBT           CHECK FOR CANCEL BIT
0128 02112 002003   SZA,RSS
0129 02113 026120   JMP  INPX0          NONE

```

0130*

0131* TAPE MODE = IGNORE CHARACTERS UNTIL 'CR'

0132*

```

0133 02114 120055   INPX  XOR  XSTAT,I   REMOVE CANCEL OR X-OFF
0134 02115 054171   CPB  ,+150         BIT IF CHARACTER IS A
0135 02116 170055   STA  XSTAT,I       CARRIAGE RETURN
0136 02117 026627   JMP  MPXEP

```

0137*

0138** TEST THE CHARACTER

0139*

```

0140 02120 054204   INPX0 CPB  CANCL    TEST FOR 'CONTROL X'
0141 02121 026170   JMP  INPX2
0142 02122 054205   CPB  BKSPC        TEST FOR BACKSPACE
0143 02123 026317   JMP  INPX7
0144 02124 054175   CPB  CNTLQ        TEST FOR 'CONTROL Q'
0145 02125 026327   JMP  INPX8
0146 02126 054203   CPB  CN1LW        TEST FOR 'CONTROL W'

```

0147	02127	026342	JMP INPX9	
0148	02130	006002	SZB	IGNORE FEED FRAMES
0149	02131	054214	CPB B177	AND RUBOUTS
0150	02132	026627	JMP MPXEP	
0151	02133	054166	CPB .+12B	IGNORE LINEFEEDS
0152	02134	026627	JMP MPXEP	
0153	02135	054177	CPB .+23B	TEST FOR X-OFF
0154	02136	002001	RSS	
0155	02137	026151	JMP INPX1	NO
0156	02140	160055	LDA XSTAT,I	YES
0157	02141	010307	AND BIT13	TEST FOR
0158	02142	002003	SZA,RSS	SUBTYPES 3 AND 4
0159	02143	026627	JMP MPXEP	NO = IGNORE CHARACTER
0160	02144	160055	LDA XSTAT,I	YES
0161	02145	030305	IOR X0BT	SET X-OFF BIT
0162	02146	170055	SIA XSTAT,I	AND REPLACE THE
0163	02147	060171	LDA .+15B	X-OFF WITH A CR
0164	02150	070070	STA XCHAR	
0165*				
0166**	APPEND CHARACTER TO BUFFER			
0167*				
0168	02151	160047	INPX1 LDA XBPNT,I	A => POSITION FOR THIS CHARACTER
0169	02152	002004	INA	A => POSITION FOR NEXT CHARACTER
0170	02153	150054	CPA XBEND,I	IF A => BEYOND END OF BUFFER,
0171	02154	040350	ADA MBLN	MAKE IT POINT TO START
0172	02155	150052	CPA XBSAV,I	IF BUFFER FULL,TRANSFER
0173	02156	026170	JMP INPX2	FOR SPECIAL HANDLING
0174	02157	164047	LDB XBPNT,I	B => ADDRESS FOR THIS CHARACTER
0175	02160	170047	SIA XBPNT,I	SAVE THE INCREMENTED POINTER
0176	02161	004065	CLE,ERB	B = WORD ADDRESS
0177	02162	160001	LDA B,I	A = DESTINATION WORD
0178	02163	002041	SEZ,RSS	IF HIGH CHARACTER
0179	02164	001727	ALF,ALF	ROTATE TO BOTTOM
0180	02165	010234	AND HIMSK	CLEAR LOWER 8 BITS
0181	02166	030070	IOR XCHAR	MERGE WITH NEW CHARACTER
0182	02167	002041	-SEZ,RSS	IF HIGH CHARACTER,
0183	02170	001727	-ALF,ALF	ROTATE BACK
0184	02171	170001	-STA B,I	STORE BACK IN BUFFER
0185	02172	060070	LDA XCHAR	IF CHARACTER
0186	02173	050171	CPA .+15B	WAS A ICR!
0187	02174	026240	JMP INPX4	GO PROCESS IT
0188	02175	026627	JMP MPXEP	
0189*				
0190**	PROCESS 'CONTROL X' (CANCEL)			
0191*				
0192	02176	160050	INPX2 LDA XBSIR,I	RESET BUFFER POINTER
0193	02177	170047	STA XBPNT,I	TO BEGINNING
0194	02200	160055	LDA XSTAT,I	LOAD USER'S STATUS
0195	02201	010150	AND TPBT	IS USER IN TAPE MODE?
0196	02202	002002	SZA	
0197	02203	026234	JMP INPX3	YES
0198	02204	164050	LDB XBSIR,I	NO, MOVE
0199	02205	004065	CLE,ERB	REVERSE
0200	02206	000207	LDA RVRSL	SLASH AND
0201	02207	170001	SIA B,I	CR LF TO
0202	02210	006004	INB	USER'S

```

0203 02211 060200 LDA CRLF BUFFER
0204 02212 170001 STA B,I
0205 02213 064045 LDB XTNUM B => TTY#
0206 02214 006004 INB B => CHARACTER COUNT
0207 02215 000151 LDA , -3 SET CHARACTER
0208 02216 170001 STA B,I COUNT TO -3
0209 02217 160055 LDA XSTAT,I CHANGE
0210 02220 010143 AND IONBT STATUS
0211 02221 170055 STA XSTAT,I TO OUTPUT
0212 02222 010301 AND RNBT IF USER NOT
0213 02223 002003 SZA,RSS RUNNING
0214 02224 016352 JSB OUTPUT STOP INPUT
0215 02225 060202 LDA SYNCC
0216 02226 164057 LDB XTYPE,I AND
0217 02227 006002 SZB
0218 02230 030301 IOR SLBIT INITIATE
0219 02231 164045 LDB XTNUM,I
0220 02232 115652 JSB IMUXR,I OUTPUT
0221 02233 026627 JMP MPXEP
0222*
0223 02234 160055 INPX3 LDA XSTAT,I SET THE
0224 02235 030160 IOR CXBT CANCEL BIT
0225 02236 170055 STA XSTAT,I IN STATUS
0226 02237 026627 JMP MPXEP
0227*
0228** PROCESS CARRIAGE RETURN
0229*
0230 02240 160055 INPX4 LDA XSTAT,I GET USER'S STATUS
0231 02241 010155 AND TPBT IS USER IN
0232 02242 002002 SZA TAPE MODE?
0233 02243 026307 JMP INPX6 YES
0234 02244 016352 JSB OUTPUT NO, CHANGE STATUS AND MPX PARAMS
0235 02245 160055 LDA XSTAT,I A = STATUS
0236 02246 010300 AND ENBT IS USER TIMED
0237 02247 002003 SZA,RSS FOR <ENTER>?
0238 02250 026274 JMP INPX5 NO
0239*
0240** PROCESS RESPONSE TO <ENTER STATEMENT>
0241*
0242 02251 120055 XOR XSTAT,I YES = CLEAR
0243 02252 170055 STA XSTAT,I TIMING FLAG
0244 02253 064050 LDB XATIM B => ATIM
0245 02254 160001 LDA B,I A = TIME-OUT VALUE
0246 02255 006004 INB B => TIMO
0247 02256 140001 ADA B,I A = TIME ACTUALLY USED
0248 02257 070072 STA MPXT0 SAVE NUMBER
0249 02260 001000 ALS 2 * NUMBER D
0250 02261 040072 ADA MPXT0 3 * NUMBER I B
0251 02262 070072 STA MPXT0 V Y
0252 02263 001723 ALF,RAR 24 * NUMBER I D 10
0253 02264 000060 CLE,ELA 51 * NUMBER E
0254 02265 040072 ADA MPXT0
0255 02266 001500 ERA
0256 02267 001727 ALF,ALF DIVIDE BY 512
0257 02270 010216 AND B377 A = NUMBER DIVIDED BY 10
0258 02271 002002 SZA ZERO AND NEGATIVE

```

0259	02272	002020	SSA	NOT ALLOWED -
0260	02273	002404	CLA,INA	SET TO ONE
0261*				
0262**	INFORM SYSTEM OF COMPLETE LINE			
0263*				
0264	02274	031662	INPX5 IUR HVL	ADD HAVE A LINE INDICATOR
0265	02275	130045	IUR XTNUM,1	ADD ITY#
0266	02276	115651	JSB IOMTM,1	TELL OTHER MACHINE
0267*				
0268*	CHECK FOR TEMPORARY LINE PRINTER SUSPENSION			
0269*				
0270	02277	060045	LDA XTNUM	GET ITY# ADDRESS
0271	02300	050104	CPA TLSUP	IS LP SUSPENDED
0272	02301	002001	RSS	FOR THIS USER?
0273	02302	026627	JMP MPXEP	NO
0274	02303	070103	STA LPITY	YES = RESET LP INDICATOR
0275	02304	002400	CLA	CLEAR TEMPORARY LINE
0276	02305	070104	STA TLSUP	PRINTER SUSPENSION FLAG
0277	02300	026627	JMP MPXEP	
0278*				
0279	02307	160050	INPX6 LDA XBSTR,1	GET POINTER TO BEGINNING
0280	02310	164047	LDB XBPNT,1	OF CURRENT BUFFER AND RESET
0281	02311	174050	STB XBSTR,1	TO CURRENT CHARACTER
0282	02312	150051	CPA XBHED,1	IF BUFFER JUST COMPLETED WAS
0283	02313	002001	RSS	
0284	02314	026627	JMP MPXEP	
0285	02315	002400	CLA	
0286	02316	026274	JMP INPX5	FIRST, TELL OTHER MACHINE
0287*				
0288**	PROCESS BACKSPACE			
0289*				
0290	02317	160047	INPX7 LDA XBPNT,1	GET BUFFER POINTER
0291	02320	150050	CPA XBSTR,1	IF NO CHARACTERS
0292	02321	026627	JMP MPXEP	RETURN IMMEDIATELY
0293	02322	150053	CPA XBGIN,1	IF AT BEGINNING OF PHYSICAL
0294	02323	040351	ADA BLEN	BUFFER, MOVE TO END
0295	02324	040153	ADA -1	BACK-UP ONE SPACE
0296	02325	170047	STA XBPNT,1	
0297	02326	026627	JMP MPXEP	
0298*				
0299**	PROCESS 'CONTROL Q' (SUSPEND LINE PRINTER OUTPUT)			
0300*				
0301	02327	060045	INPX8 LDA XTNUM	GET ITY# ADDRESS
0302	02330	050103	CPA LPITY	DOES THIS
0303	02331	020335	JMP ++4	USER HAVE
0304	02332	050104	CPA TLSUP	THE LINE
0305	02333	002001	RSS	PRINTER?
0306	02334	026151	JMP INPX1	NO = RETURN AND PROCESS CHAR.
0307	02335	070105	STA TLPR	YES = SUSPEND LP OUTPUT
0308	02336	002400	CLA	CLEAR LINE
0309	02337	070103	STA LPITY	PRINTER
0310	02340	070104	STA TLSUP	INDICATORS
0311	02341	026627	JMP MPXEP	

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0313*
0314**      PROCESS CONTROL W/ (RESUME LINE PRINTER OUTPUT)
0315*
0316 02342 060045 INPX9 LDA XNUM      GET ITY# ADDRESS
0317 02343 050105          CPA TLPR      IS LP SUSPENDED
0318 02344 002001          RSS           FOR THIS USER?
0319 02345 026151          JMP INPX1     NO - RETURN AND PROCESS CHAR.
0320 02346 070103          STA LPTTY     YES - RESET LP INDICATOR
0321 02347 002400          CLA           CLEAR TEMPORARY LINE
0322 02350 070105          STA TLPR      PRINTER RELEASE FLAG
0323 02351 026627          JMP MPXEP
0324*
0325**      STOP INPUT - CONFIGURE SEND CHANNEL
0326*
0327 02352 000000          OUTPUT NOP
0328 02353 064045          LDB XNUM
0329 02354 044164          ADB ,+?STAT  B => STATUS
0330 02355 160001          LDA B,I      SET
0331 02356 030303          IOR NIB1     'NO INPUT ALLOWED'
0332 02357 170001          STA B,I      BIT
0333 02360 044165          ADB ,+?RPRM=?STAT PREVENT
0334 02361 160001          LDA B,I      CHARACTER
0335 02362 010321          AND NECHO    ECHO
0336 02363 164045          LDB XNUM,I   GET UNIT NUMBER
0337 02364 115652          JSB IMUXR,I  OUTPUT TO MULTIPLEXER
0338 02365 102100          STF 0
0339 02366 160057          LDA XTYPE,I
0340 02367 002003          SZA,RSS
0341 02370 126352          JMP OUTPUT,I RETURN IF TERMINAL
0342 02371 030302          IOR BIT8     IS NOT A SELECTRIC
0343 02372 170057          STA XTYPE,I SET "CIRCLE D" BIT
0344 02373 126352          JMP OUTPUT,I

0346*
0347**
0348***      ABORT PROCESSING
0349**
0350*
0351 02374 103100          ABORT CLF 0
0352 02375 060076          LDA UPPER    GET MUX STATUS AND TEST
0353 02376 000010          SLA           FOR RECEIVE INTERRUPT
0354 02377 026411          JMP MPXUP     NO - OUTPUT NEXT CHARACTER
0355 02400 044164          ADB ,+?STAT
0356 02401 160001          LDA B,I      A = STATUS
0357 02402 010303          AND NIB1     CHECK FOR
0358 02403 002003          SZA,RSS      OUTPUT MODE
0359 02404 026627          JMP MPXEP     INPUT MODE - IGNORE
0360 02405 160045          LDA XNUM,I   GET ITY# AND ADD
0361 02406 031663          IOR ABR      ABORT REQUEST CODE
0362 02407 115651          JSB IOMTM,I  SEND TO OTHER MACHINE
0363 02410 026627          JMP MPXEP
0364*

```

0366*

0367**

0368*** SEND CHANNEL PROCESSING

0369**

0370*

0371	02411	006004	MPXOP	INB	B => CHARACTER COUNT
0372	02412	074046		STB XCCNT	
0373	02413	006004		INB	B => RUNNING BUFFER POINTER
0374	02414	074047		STB XBPNT	
0375	02415	006004		INB	B => START OF BUFFER
0376	02416	074050		STB XBSTR	
0377	02417	006004		INB	B => START OF FIRST BUFFER
0378	02420	074051		STB XBHED	
0379	02421	006004		INB	B => SAVED BUFFER POINTER
0380	02422	074052		STB XBSAV	
0381	02423	006004		INB	B => START OF PHYSICAL BUFFER
0382	02424	074053		STB XBGIN	
0383	02425	006004		INB	B => END OF PHYSICAL BUFFER
0384	02426	074054		STB XBEND	
0385	02427	006004		INB	B => STATUS
0386	02430	074055		STB XSTAT	
0387	02431	044160		ADB .+?TYPE=?STAT	B => TERMINAL TYPE FLAG
0388	02432	074057		STB XTYPE	
0389	02433	044157		ADB .+?DCNT=?TYPE	B => DELAY COUNTER
0390	02434	074060		STB XDCNT	
0391	02435	006004		INB	B => CR DELAY CHARACTER COUNTER
0392	02436	074061		STB XSCNT	
0393	02437	103100		CLF 0	
0394	02440	104046		LDB XCCNT,1	IF NO CHARACTERS
0395	02441	006003		SZB,RSS	LEFT, GO TO END OF
0396	02442	026553		JMP MPXEO	OUTPUT PROCESSING
0397	02443	102100		SIF 0	
0398	02444	104047		LDB XBPNT,1	B => BUFFER POINTER
0399	02445	006004		INB	B => NEXT CHARACTER
0400	02446	104054		CPB XBEND,1	IF END OF BUFFER,
0401	02447	044350		ADB MBLN	CHANGE TO BEGINNING
0402	02450	074071		STB XTPNT	SAVE POINTER
0403	02451	160060		LDA XDCNT,1	CHECK DELAY COUNTER FOR CR
0404	02452	002002		SZA	OR LF DELAY IN PROGRESS
0405	02453	026523		JMP DELAY	GO TO DELAY PROCESSING
0406	02454	004065		CLE,ERB	POSITION AS WORD POINTER
0407	02455	160001		LDA B,I	A = WORD CONTAINING CHARACTER
0408	02456	002041		SEZ,RSS	POSITION CHARACTER
0409	02457	001727		ALF,ALF	IN BITS 7=0
0410	02460	010214		AND B177	MASK OUT CHARACTER
0411	02461	070070		STA XCHAR	AND SAVE IT
0412	02462	104057		LDB XTYPE,1	GET TERMINAL TYPE
0413	02463	006002		SZB	IF TYPE IS A SELECTRIC,
0414	02464	016534		JSB SELPR	BRANCH FOR CONVERSION
0415	02465	030222		IUR DMASK	ADD STOP AND PARITY BITS
0416	02466	104045		LDB XINUM,1	B = UNIT NUMBER
0417	02467	115652		JSB IMUXR,1	OUTPUT CHARACTER
0418	02470	102100		STF 0	
0419	02471	060070		LDA XCHAR	A = CHARACTER
0420	02472	050171		CPA .+15B	IF CHARACTER IS
0421	02473	016670		JSB CRDLY	CR, SET UP DELAY

0422	02474	050160	CPA	.,+12B	IF CHARACTER IS
0423	02475	016737	JSB	LFDLY	LF, SET UP DELAY
0424*					
0425**	ADJUST BUFFER POINTERS				
0426*					
0427	02476	103100	BUFAD	CLF 0	
0428	02477	060071	LDA	XTPNT	GET BUFFER POINTER TEMPORARY
0429	02500	170047	STA	XBPNT,I	RESET BUFFER POINTER
0430	02501	134046	ISZ	XCCNT,I	INCREMENT CHARACTER COUNT
0431	02502	002001	RSS		IF COUNT IS ZERO, GO
0432	02503	026627	JMP	MPXEP	TO MUX END OF PROCESSING
0433	02504	134061	ISZ	XSCNT,I	INCREMENT CR DELAY CHAR. COUNT
0434	02505	160040	LDA	XCCNT,I	GET CHARACTER COUNT
0435	02506	102100	STF	0	
0436	02507	050142	CPA	.-10	ARE EXACTLY 10
0437	02510	002001	RSS		CHARACTERS LEFT?
0438	02511	026627	JMP	MPXEP	NO = CONTINUE
0439*					
0440**	NOTIFY SYSTEM - BUFFER CAN TAKE CHARACTERS AGAIN				
0441*					
0442	02512	160055	LDA	XSTAT,I	YES, GET THE STATUS
0443	02513	010151	AND	STNBT	AND CHECK WHETHER USER
0444	02514	150055	CPA	XSTAT,I	WAS STOPPED OR NOT
0445	02515	026627	JMP	MPXEP	NOT = CONTINUE
0446	02516	170055	STA	XSTAT,I	CLEAR BUFFER FULL BIT
0447	02517	160045	LDA	XTNUM,I	GET USER'S TTY#
0448	02520	031665	IOR	BFE	ADD BUFFER EMPTY CODE
0449	02521	115651	JSB	IOMTM,I	AND TELL OTHER MACHINE
0450	02522	026627	JMP	MPXEP	
0451*					
0452**	OUTPUT DELAY CHARACTER				
0453*					
0454	02523	060202	DELAY	LDA SYNCC	GET DELAY CHARACTER
0455	02524	164057	LDB	XTYPE,I	
0456	02525	006002	SZB		
0457	02526	030301	IOR	SLBIT	
0458	02527	164045	LDB	XTNUM,I	B = UNIT NUMBER
0459	02530	115652	JSB	IMUXR,I	OUTPUT DELAY CHARACTER
0460	02531	134060	ISZ	XDCNT,I	CHECK FOR FURTHER DELAY TIME
0461	02532	026627	JMP	MPXEP	YES
0462	02533	026476	JMP	BUFAD	NO = ADJUST BUFFER POINTERS
0463*					
0464**	SELECTRIC CHARACTER PROCESSING				
0465*					
0466	02534	000000	SELPR	NOP	
0467	02535	060045	LDA	XTNUM	IF USER HAS LP,
0468	02536	050100	CPA	LPTTY	IGNORE THE
0469	02537	026547	JMP	SLPII	INTERRUPT
0470	02540	114336	JSB	OCNV,I	CONVERT ASCII CHARACTER
0471	02541	006003	SZB,RSS		RETURN UNLESS
0472	02542	126534	JMP	SELPR,I	MULTI-CHARACTERS REQUIRED
0473	02543	164045	LDB	XTNUM,I	B = UNIT NUMBER
0474	02544	030222	IOR	DMASK	ADD STOP AND PARITY BITS
0475	02545	115652	JSB	IMUXR,I	AND OUTPUT IT
0476	02546	026627	JMP	MPXEP	
0477*					

0478	02547	160057	SLPII	LDA	XTYPE,I	CLEAR
0479	02550	010315		AND	NBT8	CIRCLE D
0480	02551	170057		STA	XTYPE,I	BIT
0481	02552	026627		JMP	MPXEP	
0482*						
0483**	END OF OUTPUT PROCESSING					
0484*						
0485	02553	060107	MPXEO	LDA	LPERF	GET LINE PRINTER ERROR REPORT
0486	02554	050045		CPA	XTNUM	FLAG AND IF IT MATCHES THIS
0487	02555	026625		JMP	MPXEF	USER, BRANCH FOR PROCESSING
0488	02556	160057		LDA	XTYPE,I	IS THE
0489	02557	010314		AND	CBNBT	CIRCLE C
0490	02560	150057		CPA	XTYPE,I	BIT SET?
0491	02561	026564		JMP	MPXEC	NO = CONTINUE
0492	02562	170057		STA	XTYPE,I	YES, CLEAR IT
0493	02563	026627		JMP	MPXEP	AND GET OUT OF TOWN
0494	02564		MPXEC	EQU	*	
0495	02564	160053		LDA	XBGIN,I	RESET ALL
0496	02565	170047		STA	XBPNT,I	BUFFER POINTERS
0497	02566	170050		STA	XBSTR,I	TO THE BEGINNING
0498	02567	170051		STA	XBHED,I	OF THE USER'S
0499	02570	170052		STA	XBSAV,I	BUFFER
0500	02571	160055		LDA	XSTAT,I	CHANGE
0501	02572	030164		IOR	IOBT	STATUS
0502	02573	170055		STA	XSTAT,I	TO INPUT
0503	02574	010323		AND	ICNBT	REMOVE 'INPUT CONFIGURATION' BIT
0504	02575	150055		CPA	XSTAT,I	BRANCH
0505	02576	002001		RSS		IF IT
0506	02577	026604		JMP	MPXIC	WAS SET
0507	02600	010301		AND	RNBT	CHECK FOR USER RUNNING
0508	02601	002002		SZA		
0509	02602	026627		JMP	MPXEP	YES
0510	02603	160055		LDA	XSTAT,I	NO, REMOVE
0511	02604	010316	MPXIC	AND	NINBT	'NO INPUT ALLOWED'
0512	02605	170055		STA	XSTAT,I	BIT
0513	02606	064045		LDB	XTNUM	GET USER'S
0514	02607	044175		AOB	+?RPRM	RECEIVE
0515	02610	160001		LDA	B,I	PARAMETER
0516	02611	164045		LDB	XTNUM,I	B = UNIT NUMBER
0517	02612	115652		JSB	IMUXR,I	OUTPUT TO MULTIPLEXER
0518	02613	160057		LDA	XTYPE,I	TERMINAL
0519	02614	002003		SZA,RSS		A SELECTRIC?
0520	02615	026627		JMP	MPXEP	NO
0521	02616	030301		IOR	CBBT	YES, SET CIRCLE C
0522	02617	010335		AND	NDUBT	BIT, CLEAR DIBT AND
0523	02620	170057		STA	XTYPE,I	UPPER CASE BIT
0524	02621	060225		LDA	CRCLC	
0525	02622	164045		LDB	XTNUM,I	OUTPUT
0526	02623	115652		JSB	IMUXR,I	CIRCLE C
0527	02624	026627		JMP	MPXEP	
0528*						
0529	02625	070110	MPXEF	STA	LPDRF	SET LP DOWN RETURN FLAG
0530	02626	026627		JMP	MPXEP	

0532*

0533**

0534*** MULTIPLEXER END OF PROCESSING

0535**

0536*

0537	02627	103100	MPXEP	CLF 0	
0538	02630	060100		LDA YFLAG	IS Y-MULTIPLEXER FLAG SET?
0539	02631	002002		SZA	
0540	02632	026656		JMP MP.Y	YES
0541	02633	060077		LDA XFLAG	NO - IS X-MULTIPLEXER FLAG SET?
0542	02634	002002		SZA	
0543	02635	026645		JMP MP.X	YES
0544	02636	060064		LDA MPXE	NO - RESTORE
0545	02637	001600		ELA	E,
0546	02640	060062		LDA MPXA	A,
0547	02641	064063		LDB MPXB	AND B
0548	02642	103113		CLF MPX	ENABLE X-MULTIPLEXER INTERRUPTS
0549	02643	102100		STF 0	
0550	02644	125742		JMP MPXIO,I	
0551*					
0552	02645	002400	MP.X	CLA	
0553	02646	070077		SIA XFLAG	CLEAR X-MULTIPLEXER FLAG
0554	02647	060067		LDA MPYE	RESTORE
0555	02650	001600		ELA	E,
0556	02651	060065		LDA MPYA	A,
0557	02652	064066		LDB MPYB	AND B
0558	02653	103113		CLF MPX	ENABLE X-MULTIPLEXER INTERRUPTS
0559	02654	102100		STF 0	
0560	02655	125764		JMP MPYIO,I	
0561*					
0562	02656	060077	MP.Y	LDA XFLAG	IS X-MULTIPLEXER
0563	02657	002002		SZA	FLAG ALSO SET?
0564	02660	026671		JMP MP.YX	YES
0565	02661	070100		SIA YFLAG	CLEAR Y-MULTIPLEXER FLAG
0566	02662	060067		LDA MPYE	RESTORE
0567	02663	001600		ELA	E,
0568	02664	060065		LDA MPYA	A,
0569	02665	064066		LDB MPYB	AND B
0570	02666	103116		CLF MPY	ENABLE Y-MULTIPLEXER INTERRUPTS
0571	02667	102100		STF 0	
0572	02670	125764		JMP MPYIO,I	
0573*					
0574	02671	002400	MP.YX	CLA	
0575	02672	070100		SIA YFLAG	CLEAR Y-MULTIPLEXER FLAG
0576	02673	103116		CLF MPY	ENABLE Y-MULTIPLEXER INTERRUPTS
0577	02674	102100		STF 0	
0578	02675	026003		JMP MUXX	GO PROCESS X-MPX INTERRUPT

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0580*
0581*  SUBROUTINE TO SET CR-DELAY.
0582*
0583  02676  000000  CRDLY  NOP
0584  02677  164057          LDB  XTYPE,I      B= ?TYPE
0585  02700  006002          SZB                      TYPE#1?
0586  02701  026713          JMP  CRDL1        NO.
0587  02702  064045          LDB  XTNUM       YES. B=> ?CDLY
0588  02703  044171          ADB  .+?CDLY
0589  02704  164001          LDB  B,I        B= ?CDLY
0590  02705  174060          STB  XDCNT,I    SET CR-DELAY=(?CDLY)
0591  02706  002400          CLA                      SET?SCNT=0.
0592  02707  170001          SIA  XSCNT,I
0593  02710  006002          SZB                      ?CDLY=0?
0594  02711  026627          JMP  MPXEP      NO. GO TO END-OF-PROCESSING.
0595  02712  126676          JMP  CRDLY,I    YES. RETURN.
0596  02713          CRDL1  EQU  *
0597  02713  160061          LDA  XSCNT,I    A= ?SCNT.      COMPUTE *****
0598  02714  001000          ALS          *2
0599  02715  140061          ADA  XSCNT,I    *3                      IBM 2741 ***
0600  02716  170061          SIA  XSCNT,I
0601  02717  001723          ALF, RAR      *24
0602  02720  000066          CLE, ELA      CR ****
0603  02721  140061          ADA  XSCNT,I    *51
0604  02722  001500          ERA
0605  02723  001727          ALF, ALF      DELAY.*
0606  02724  010216          AND  B377
0607  02725  040157          ADA  .+3      A= (?SCNT):10
0608  02726  040134          ADA  .-16     A=NR. OF FILL CHARS.
0609  02727  002021          SSA, RSS     LARGER THAN 15?
0610  02730  003400          CCA          YES. SET TO 15.
0611  02731  040174          ADA  .+16     NO. RESTORE.
0612  02732  003004          CMA, INA     NEGATE.
0613  02733  170060          STA  XDCNT,I  SET CR-DELAY IN ?DCNT.
0614  02734  002400          CLA
0615  02735  170061          SIA  XSCNT,I  SET ?SCNT=0.
0616  02736  026627          JMP  MPXEP    GO TO END-OF-PROCESSING.
0617*
0618*  SUBROUTINE TO SET LF-DELAY.
0619*
0620  02737  000000  LFDLY  NOP
0621  02740  160057          LDA  XTYPE,I    A= ?TYPE.
0622  02741  007400          CCB          B=-1
0623  02742  002002          SZA          TYPE#1?
0624  02743  026747          JMP  LFDL2     NO.
0625  02744  064045          LDB  XTNUM     YES. B=> ?LDLY
0626  02745  044172          ADB  .+?LDLY
0627  02746  164001          LDB  B,I      B= ?LDLY.
0628  02747          LFDL2  EQU  *
0629  02747  174060          STB  XDCNT,I  SET LF-DELAY.
0630  02750  002400          CLA
0631  02751  170061          STA  XSCNT,I  SET ?SCNT=0.
0632  02752  006002          SZB          LF-DELAY=0?
0633  02753  026627          JMP  MPXEP    NO. GO TO END-OF-PROCESSING.
0634  02754  126737          JMP  LFDLY,I  YES. RETURN.
0635  02755          MPXIE  EQU  *

```

0636 02755

MPYIE EQU *

0002*
 0003**
 0004***
 0005**
 0006*
 0007*
 0008*
 0009*
 0010*
 0011*
 0012*
 0013*
 0014*
 0015*

LINE PRINTER DRIVER

THIS DRIVER IS USED FOR THE 2767A, THE 2778A, AND THE 2610A
 LINE PRINTERS. NORMAL ENTRY IS FROM THE IDLE LOOP AND ONCE
 ENTERED, THE DRIVER REPLACES THE IDLE LOOP UNTIL OUTPUT IS
 COMPLETED. THE FLAG, LPTYP, INDICATES WHICH LINE PRINTER IS
 ON THE SYSTEM:

2767A = TYPE -1 2778A = TYPE 0 2610A = TYPE 1

DRIVER INITIALIZATION

0017*
 0018 02755 002400 LPINT CLA
 0019 02756 070106 STA LFLAG
 0020 02757 064103 LDB LPTTY
 0021 02760 074114 STB LTNUM
 0022 02761 006004 INB
 0023 02762 074115 STB LCCNT
 0024 02763 006004 INB
 0025 02764 074116 STB LBPNT
 0026 02765 006004 INB
 0027 02766 074117 STB LBSTR
 0028 02767 006004 INB
 0029 02770 074120 STB LBHED
 0030 02771 006004 INB
 0031 02772 074121 STB LBSAV
 0032 02773 006004 INB
 0033 02774 074122 STB LBGIN
 0034 02775 006004 INB
 0035 02776 074123 STB LBEND
 0036 02777 006004 INB
 0037 03000 074124 STB LSTAT

CLEAR THE
 INITIALIZATION FLAG
 B => TTY*

S
 E
 T B
 U U
 P F P
 F O
 E I
 R N
 T
 E
 R
 S

PROCESS NEXT CHARACTER

0038*
 0039**
 0040*
 0041 03001 102100 LPPNC SIF 0
 0042 03002 060103 LDA LPTTY
 0043 03003 002003 SZA, RSS
 0044 03004 124330 JMP IDLEL,1
 0045 03005 103100 CLF 0
 0046 03006 017116 JSB LPCR
 0047 03007 070125 STA LCHAR
 0048 03010 174116 STB LBPNT,1
 0049 03011 050177 CPA ,+23B
 0050 03012 027162 JMP LPSUP
 0051 03013 006400 CLB
 0052 03014 074112 STB LPXOF
 0053 03015 050171 CPA ,+15B
 0054 03016 027132 JMP LPCR
 0055 03017 050160 CPA ,+12B
 0056 03020 027153 JMP LPLF
 0057 03021 040240 ADA ,40

IF USER NO
 LONGER HAS LP,
 GO TO IDLE LOOP

GET NEXT CHARACTER
 AND SAVE IT
 ADJUST BUFFER POINTER
 CHECK
 FOR X-OFF

CHECK
 FOR CR
 CHECK
 FOR LF
 CHARACTER < 40B?

0058	03022	002020	SSA	
0059	03023	027056	JMP LPECT	YES = IGNORE IT
0060	03024	040236	ADA .100	CHARACTER > 137B?
0061	03025	002020	SSA	
0062	03026	027037	JMP LPOUT	NO = OUTPUT CHARACTER
0063	03027	060125	LDA LCHAR	YES,
0064	03030	004102	LDB LPTYP	
0065	03031	054155	CPB ,+1	IF LP NOT
0066	03032	002001	RSS	A 2610A,
0067	03033	010213	AND B137	REMOVE BITS
0068	03034	050213	CPA B137	CHECK FOR
0069	03035	027056	JMP LPECT	RUBOUT
0070	03036	070125	STA LCHAR	
0071*				
0072**	OUTPUT THE CHARACTER			
0073*				
0074	03037	102500	LPOUT LIA 0	GET LINE PRINTER STATUS
0075	03040	102100	SIF 0	
0076	03041	004102	LDB LPTYP	GET LP TYPE FLAG
0077	03042	006020	SSB	2778A OR 2610A LINE PRINTER?
0078	03043	027047	JMP LOUT1	NO = 2767A
0079	03044	002021	SSA,RSS	IS LP READY?
0080	03045	027230	JMP LDWN	NO, LP DOWN
0081	03046	027051	JMP LOUT2	YES
0082	03047	002020	LOUT1 SSA	IS LP READY?
0083	03050	027230	JMP LDWN	NO, LP DOWN
0084	03051	102300	LOUT2 SFS 0	WAIT UNTIL
0085	03052	027037	JMP LPOUT	LP NOT BUSY
0086	03053	060125	LDA LCHAR	
0087	03054	102600	PSC4 OTA 0	OUTPUT THE
0088	03055	103700	PSC5 STC 0,C	CHARACTER
0089*				
0090**	END OF CHARACTER TRANSMISSION			
0091*				
0092	03056	103100	LPECT CLF 0	
0093	03057	060103	LDA LPTTY	IF USER NO
0094	03060	002003	SZA,RSS	LONGER HAS LP,
0095	03061	124330	JMP IDLEL,I	GO TO IDLE LOOP
0096	03062	134115	ISZ LCCNT,I	INCREMENT CHARACTER COUNT
0097	03063	002001	RSS	IF COUNT IS ZERO, GO
0098	03064	027105	JMP LPEND	TO END OF OUTPUT LOGIC
0099	03065	017067	JSB LBECK	BUFFER EMPTY CHECK
0100	03066	027001	JMP LPPNC	
0101*				
0102**	NOTIFY SYSTEM = BUFFER CAN TAKE CHARACTERS AGAIN			
0103*				
0104	03067	000000	LBECK NOP	
0105	03070	160115	LDA LCCNT,I	IS CHARACTER
0106	03071	040166	ADA .+10	COUNT <= 10?
0107	03072	002020	SSA	
0108	03073	127067	JMP LBECK,I	NO
0109	03074	160124	LDA LSTAT,I	YES
0110	03075	010151	AND STNBT	IF 'BUFFER FULL' BIT
0111	03076	150124	CPA LSTAT,I	
0112	03077	127067	JMP LBECK,I	IS SET, REMOVE IT AND
0113	03100	170124	STA LSTAT,I	

0114	03101	160114	LDA	LTNUM,I	TELL OTHER MACHINE TO	
0115	03102	031665	IOR	HFE		
0116	03103	115651	JSR	IOMTM,I	SEND MORE CHARACTERS	
0117	03104	127067	JMP	LBECK,I		
0118*						
0119**				END OF OUTPUT PROCESSING		
0120*						
0121	03105	160122	LPEND	LDA	LBBIN,I	RESET ALL
0122	03106	170116		STA	LBPNT,I	BUFFER POINTERS
0123	03107	170117		STA	LBSTR,I	TO THE BEGINNING
0124	03110	170120		STA	LBHED,I	OF THE USER'S
0125	03111	170121		STA	LBSAV,I	BUFFER
0126	03112	160124		LDA	LSTAT,I	CHANGE
0127	03113	030164		IOR	IOBT	STATUS
0128	03114	170124		STA	LSTAT,I	TO INPUT
0129	03115	124330		JMP	IDLEL,I	GO TO IDLE LOOP
0131*						
0132**				GET NEXT CHARACTER		
0133*						
0134	03116	000000	LPCHR	NOP		
0135	03117	164116		LDB	LBPNT,I	
0136	03120	006004		INB		B => NEXT CHARACTER
0137	03121	154123		CPB	LBEND,I	IF END OF BUFFER
0138	03122	044350		AOB	MBLEN	CHANGE TO BEGINNING
0139	03123	060001		LDA	B	
0140	03124	000065		CLE	ERA	POSITION AS WORD POINTER
0141	03125	160000		LDA	A,I	A = WORD CONTAINING CHARACTER
0142	03126	002041		SEZ	RSS	POSITION CHARACTER
0143	03127	001727		ALF	ALF	IN BITS 7-0
0144	03130	010214		AND	B177	MASK OUT CHARACTER
0145	03131	127116		JMP	LPCHR,I	
0146*						
0147**				LINE PRINT (CR) AND PAPER ADVANCE (LF)		
0148*						
0149	03132	060102	LPCR	LDA	LPTYP	GET THE LP TYPE FLAG
0150	03133	002020		SSA		2767A LINE PRINTER?
0151	03134	027140		JMP	LPCR1	YES = OUTPUT 15B
0152	03135	002404		CLA	INA	NO, 2778A OR 2610A
0153	03136	001300		RAR		OUTPUT
0154	03137	070125		STA	LCHAR	100000B
0155	03140	160115	LPCR1	LDA	LCCNT,I	IF THIS IS
0156	03141	050153		CPA	.-1	LAST CHARACTER,
0157	03142	027037		JMP	LPOUT	OUTPUT IT
0158	03143	017116		JSB	LPCHR	GET NEXT CHARACTER
0159	03144	050166		CPA	.-12B	IS IT
0160	03145	002001		RSS		A 'LF'?
0161	03146	027037		JMP	LPOUT	NO
0162	03147	174116		STB	LBPNT,I	YES, UPDATE BUFFER POINTER
0163	03150	134115		ISZ	LCCNT,I	AND CHARACTER COUNT
0164	03151	070125		STA	LCHAR	
0165	03152	017067		JSB	LBECK	BUFFER EMPTY CHECK
0166*						
0167	03153	060102	LPLF	LDA	LPTYP	GET LP TYPE FLAG
0168	03154	002020		SSA		2767A LINE PRINTER?
0169	03155	027037		JMP	LPOUT	YES = OUTPUT 12B

0170	03156	060157	LDA	.,+3	NO, 2778A OR 2610A
0171	03157	001300	RAR		OUTPUT
0172	03160	070125	STA	LCHAR	100001B
0173	03161	027037	JMP	LPOUT	

0175*

0176** TEMPORARY LINE PRINTER SUSPENSION

0177*

0178	03162	064112	LPSUP	LDB LPXOF	X-OFF FLAG SET?
0179	03163	006002		SZB	
0180	03164	027167		JMP .+3	YES
0181	03165	034112		ISZ LPXOF	NO, SET IT
0182	03166	027056		JMP LPECT	
0183*					
0184	03167	102100		SIF 0	
0185	03170	064114		LDB LTNUM	IS THE
0186	03171	044170		ADB .+?TYPE	CIRCLE 0
0187	03172	160001		LDA B,I	INTERRUPT
0188	03173	010302		AND BIT8	CLEARED?
0189	03174	002002		SZA	
0190	03175	027172		JMP .-3	NO - WAIT
0191	03176	103100		CLF 0	
0192	03177	060103		LDA LPITY	SET TEMPORARY LP
0193	03200	070104		STA TLSUP	SUSPENSION FLAG
0194	03201	002400		CLA	
0195	03202	070103		STA LPITY	
0196	03203	070112		STA LPXOF	
0197	03204	134115		ISZ LCCNT,I	
0198	03205	017067		JSB LBECK	BUFFER EMPTY CHECK

0200*

0201** START TTY OUTPUT

0202*

0203	03206	064114	LSYNC	LDB LTNUM	
0204	03207	044170		ADB .+?TYPE	B=> ?TYPE
0205	03210	160001		LDA B,I	IF SELECTRIC AND
0206	03211	002003		SZA,RSS	BIT12 IS SET,
0207	03212	027221		JMP LSYN1	SET BIT8,
0208	03213	010306		AND BIT12	
0209	03214	002003		SZA,RSS	
0210	03215	027221		JMP LSYN1	
0211	03216	160001		LDA B,I	
0212	03217	030302		IOR BIT8	
0213	03220	170001		STA B,I	
0214	03221	060202	LSYN1	LDA SYNC	GET SYNC CHARACTER.
0215	03222	160001		LDB B,I	ADD BIT7 FOR SELECTRIC.
0216	03223	006002		SZB	
0217	03224	030301		IOR SLBIT	
0218	03225	164114		LDB LINUM,I	GET TTY#
0219	03226	115652		JSB IMUXR,I	OUTPUT SYNC CHARACTER
0220	03227	124330		JMP IDLEL,I	GO TO IDLE LOOP

0222*

0223**

0224*** LINE PRINTER DOWN PROCESSING

0225**

0226*

0227	03230	103100	LDWN	CLF 0	
0228	03231	060103		LDA LPTTY	IF USER NO
0229	03232	002003		SZA,RSS	LONGER HAS LP,
0230	03233	124330		JMP IDLEL,I	GO TO IDLE LOOP
0231	03234	100124		LDA LSTAT,I	IS OTHER MACHINE
0232	03235	030156		IOR STBT	STILL SENDING
0233	03236	150124		CPA LSTAT,I	CHARACTERS
0234	03237	027244		JMP LDW1	NO
0235	03240	170124		STA LSTAT,I	YES, SET 'BUFFER FULL' BIT
0236	03241	160114		LDA LTNUM,I	TELL OTHER MACHINE
0237	03242	031604		IOR BFL	TO STOP SENDING
0238	03243	115651		JSH IOMTM,I	CHARACTERS
0239	03244	103100	LDW1	CLF 0	
0240	03245	160110		LDA LBPNT,I	
0241	03246	070113		STA LPBT1	SAVE
0242	03247	160115		LDA LCCNT,I	BUFFER
0243	03250	073300		STA LPBT2	POINTERS
0244	03251	063270		LDA DMBPT	
0245	03252	170116		STA LBPNT,I	SET ERROR
0246	03253	060142		LDA *-10	BUFFER
0247	03254	170115		STA LCCNT,I	POINTERS
0248	03255	054114		LDB LTNUM	
0249	03256	074107		STB LPERF	SET LP ERROR FLAG
0250	03257	102100		STP 0	
0251	03260	044170		ADB +?TYPE	IS THE
0252	03261	160001		LDA B,I	CIRCLE 0
0253	03262	010302		AND B118	INTERRUPT
0254	03263	002002		SZA	CLEARED?
0255	03264	027261		JMP *-3	NO = WAIT
0256	03265	000400		CLB	
0257	03266	074103		SIB LPTTY	
0258	03267	027200		JMP LSYNC	START TTY OUTPUT

0260	03270	000012	DMESS	UCT 12	
0261	03271	046120		ASC 3,LP DOWN	
0262	03274	047010		UCT 47015	
0263	03275	035000		UCT 5000	
0264	03276	000500	DMBPT	DEF DMESS+DMESS	
0265	03277	000113	LPBT	DEF LPBT1	
0266	03300	000000	LPBT2	BSS 1	

0268*

0269** LINE PRINTER DOWN RETURN

0270*

0271	03301	103100	LDWNR	CLF 0	
0272	03302	060107		LDA LPERF	
0273	03303	070103		STA LPTTY	
0274	03304	002400		CLA	CLEAR LP DOWN
0275	03305	070110		STA LPRF	RETURN FLAG
0276	03306	070107		STA LPERF	

0277	03307	060113	LDA LPB11	RESTORE
0278	03310	170116	STA LBPNT,I	BUFFER
0279	03311	063300	LDA LPBT2	POINTERS
0280	03312	170115	STA LCCNT,I	IS CHARACTER
0281	03313	040166	ADA ,+10	COUNT 10 OR LSS?
0282	03314	002020	SSA	NO
0283	03315	027324	JMP LDWN1-1	YES = TELL OTHER
0284	03316	160114	LDA LTNUM,I	MACHINE TO SEND
0285	03317	031665	IOR BFE	MORE CHARACTERS
0286	03320	115651	JSB IOMTM,I	REMOVE THE
0287	03321	160124	LDA LSTAT,I	"BUFFER FULL"
0288	03322	010151	AND STNBT	BIT
0289	03323	170124	STA LSTAT,I	GET LP STATUS
0290	03324	102100	STF 0	IF USER ID
0291	03325	102500	LDWN1 LIA 0	LONGER HAS LP,
0292	03326	064103	LDB LPTTY	GO TO IDLE LOOP
0293	03327	006003	SZB,RSS	GET LP TYPE FLAG
0294	03330	124330	JMP IDLEL,I	2778A OR 2610A LINE PRINTER?
0295	03331	064102	LDB LPIYP	NO = 2767A
0296	03332	006020	SSB	IS LP READY?
0297	03333	027337	JMP LDWN2	NO
0298	03334	002021	SSA,RSS	YES = CONTINUE OUTPUT
0299	03335	027325	JMP LDWN1	IS LP READY?
0300	03336	027037	JMP LPOUT	NO
0301	03337	002020	LDWN2 SSA	YES = CONTINUE OUTPUT
0302	03340	027325	JMP LDWN1	
0303	03341	027037	JMP LPOUT	
0304*				

CLC
CLF
STF

0362*

0363* BUFFER FULL PROCESSING

0364*

0365	03410	044163	ADB	.,+?STAT-?CCNT	
0366	03411	160001	LDA	B,I	A = STATUS
0367	03412	030156	IOR	STBT	SET (TURNED OFF) BIT
0368	03413	170001	SIA	B,I	RESTORE STATUS
0369	03414	160265	LDA	PTNUM,I	GET USER'S TTY#
0370	03415	031664	IOR	BFL	ADD BUFFER FULL CODE
0371	03416	115651	JSB	IUMTM,I	AND TELL OTHER MACHINE
0372	03417	025653	JMP	SRRTN	RETURN

0374*

0375** OUTPUT INITIALIZATION ROUTINE

0376*

0377	03420	000000	OINIT	NOP	
0378	03421	120001	XOR	B,I	REMOVE
0379	03422	170001	STA	B,I	INPUT BIT
0380	03423	044145	ADB	.,+?CCNT-?STAT	
0381	03424	002400	CLA		SET CHARACTER
0382	03425	170001	STA	B,I	COUNT TO ZERO
0383	03426	044161	ADB	.,+?BGIN-?CCNT	
0384	03427	160001	LVA	B,I	A = POINTER TO BUFFER HEAD
0385	03430	044150	ADB	.,+?BPNT-?BGIN	
0386	03431	170001	STA	B,I	RESET ALL BUFFER
0387	03432	006004	INB		
0388	03433	170001	SIA	B,I	POINTERS TO THE
0389	03434	006004	INB		
0390	03435	170001	SIA	B,I	BEGINNING OF THE
0391	03436	006004	INB		
0392	03437	170001	STA	B,I	USER'S BUFFER
0393	03440	044147	ADB	.,+?PTNUM-?BSAV	B = TTY# ADDRESS
0394	03441	054103	CPB	LPITY	DOES THIS USER HAVE THE LP?
0395	03442	027525	JMP	POINT	YES
0396	03443	044164	ADB	.,+?STAT	
0397	03444	160001	LDA	B,I	A = STATUS
0398	03445	030303	IOR	NIBT	IS PORT SETUP
0399	03446	150001	CPA	B,I	FOR OUTPUT?
0400	03447	027466	JMP	OINT0	YES,
0401	03450	170001	STA	B,I	NO, SET "NO INPUT ALLOWED" BIT
0402	03451	044165	ADB	.,+?RPRM-?STAT	
0403	03452	160001	LDA	B,I	
0404	03453	010321	AND	NECH0	MAKE SURE
0405	03454	164265	LDB	PTNUM,I	USER'S ECHO IS
0406	03455	115652	JSB	IMUXR,I	TURNED OFF
0407	03456	064265	LDB	PTNUM	
0408	03457	044170	ADB	.,+?TYPE	GET THE
0409	03460	160001	LDA	B,I	TERMINAL TYPE
0410	03461	002003	SZA	RSS	SELECTRIC?
0411	03462	027472	JMP	OINT1	NO
0412	03463	030221	IUR	TRINT	PREPARE UNIT
0413	03464	170001	STA	B,I	FOR TRANSMIT
0414	03465	027514	JMP	OINT3	INTERRUPT
0415	03466	044160	OINT0	ADB	.,+?TYPE-?STAT
0416	03467	160001	LDA	B,I	
0417	03470	002002	SZA		BRANCH IF PORT

PAGE 0041 #03 PROCESS OUTPUT CHARACTER ROUTINE

```

0418 03471 027500      JMP OINT2          IS A SELECTRIC
0419 03472 044155      OINT1 ADB .+?CDLY=?TYPE  GET
0420 03473 160001      LDA B,1          CR DELAY
0421 03474 002004      INA              IF ANY
0422 03475 002021      SSA,RSS
0423 03476 027514      JMP OINT3        NO DELAY
0424 03477 002001      RSS
0425 03500 000130      OINT2 LDA .-14     SELECTRIC DELAY
0426 03501 004265      LDB PTNUM
0427 03502 044173      ADB .+?DCNT
0428 03503 170001      STA B,1          STORE DELAY AND
0429 03504 003400      CCA              INCREMENT
0430 03505 044130      ADB .+?CCNT=?DCNT CHARACTER
0431 03506 170001      STA B,1          COUNT
0432 03507 006004      INB
0433 03510 160001      LDA B,1          A = CHARACTER POINTER
0434 03511 002004      INA              INCREMENT
0435 03512 006004      INB              CHARACTER
0436 03513 170001      STA B,1          POINTER
0437 03514 000202      OINT3 LDA SYNCC    GET SYNC CHARACTER
0438 03515 004265      LDB PTNUM
0439 03516 044170      ADB .+?TYPE     ADD BIT 7
0440 03517 164001      LDB B,1          FOR SELECTRICS
0441 03520 006002      SZB
0442 03521 030301      IOR SLBIT
0443 03522 104265      LDB PTNUM,1     GET TTY#
0444 03523 115052      JSB IMUXR,1     OUTPUT SYNC CHARACTER
0445 03524 127420      JMP OINIT,1
0446*
0447**      LINE PRINTER OUTPUT INITIALIZATION
0448*
0449 03525 002404      POINT CLA,INA   SET LP INITIALIZATION FLAG
0450 03526 070100      STA LFLAG       IF USER HAS
0451 03527 044170      ADB .+?TYPE     A SELECTRIC
0452 03530 160001      LDA B,1         AND IS IN INPUT
0453 03531 010302      AND BIT8        MODE = -
0454 03532 002003      SZA,RSS
0455 03533 127420      JMP OINIT,1
0456 03534 060224      LDA CRCLD       OUTPUT
0457 03535 164265      LDB PTNUM,1     CIRCLE 0
0458 03536 115052      JSB IMUXR,1     TO HIS PORT
0459 03537 127420      JMP OINIT,1

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0461*

0462** LINE PRINTER SELECT CODE

0463*

0464	03540	PSC	EQU *	
0465	03540	006400	CLB	B = 0
0466	03541	060260	LDA RCODE	GET SELECT CODE AND TYPE
0467	03542	001727	ALF,ALF	MOVE SC TO RIGHT END
0468	03543	002020	SSA	
0469	03544	006004	INB	LP TYPE:
0470	03545	001200	RAL	B = -1 2767A
0471	03546	002020	SSA	0 2778A
0472	03547	007400	CCB	1 2610A
0473	03550	001300	RAR	
0474	03551	010211	AND B37	MASK TO SELECT CODE
0475	03552	070101	STA PRISC	STORE IN SC INDICATOR
0476	03553	002003	SZA,RSS	IS SELECT CODE = 0?
0477	03554	125636	JMP LPDJM,I	YES = REMOVE USER IF ANY
0478	03555	074102	STB LPIYP	SET LP TYPE FLAG
0479	03556	070001	STA B	B = SC
0480	03557	063613	LDA PSC,	FORM CLC SC
0481	03560	030001	IOR B	
0482	03561	170001	STA B,I	
0483	03562	063624	LDA PSC1	FORM LIA SC
0484	03563	010236	AND SCMSK	
0485	03564	030001	IOR B	
0486	03565	073624	STA PSC1	
0487	03566	073632	STA LPR2	
0488	03567	073037	STA LPOUT	
0489	03570	073325	STA LDWN1	
0490	03571	063760	LDA PSC2	FORM OTA SC
0491	03572	010236	AND SCMSK	
0492	03573	030001	IOR B	
0493	03574	073760	STA PSC2	
0494	03575	073054	STA PSC4	
0495	03576	170343	STA TK0,2,I	
0496	03577	063761	LDA PSC3	FORM STC SC,C
0497	03600	010236	AND SCMSK	
0498	03601	030001	IOR B	
0499	03602	073761	STA PSC3	
0500	03603	073055	STA PSC5	
0501	03604	170344	STA TK0,3,I	
0502	03605	063051	LDA LOUT2	FORM SFS SC
0503	03606	010236	AND SCMSK	
0504	03607	030001	IOR B	
0505	03610	073051	STA LOUT2	
0506	03611	170342	STA TK0,1,I	
0507	03612	125636	JMP LPDJM,I	REMOVE USER IF ANY
0508*				
0509	03613	106700	PSC, CLB	

0511*

0512** LINE PRINTER REQUEST

0513*

0514	03514		LPR	EQU *	
0515	03514	060101		LDA PRISC	GET LP INDICATOR
0516	03515	022002		SLA	IS LP AVAILABLE?
0517	03516	027621		JMP LPR1	YES
0518	03517	102610		OTA C1	NO = OUTPUT A#0
0519	03520	025653		JMP SRRIN	RETURN
0520*					
0521	03621	060102	LPR1	LDA LPTYP	GET LP TYPE INDICATOR
0522	03622	002020		SSA	2767A LINE PRINTER?
0523	03623	027632		JMP LPR2	YES
0524	03624	102500	PSC1	LIA 0	NO, 2778 OR 2610 =READ LP STATUS
0525	03625	002020		SSA	IS LINE PRINTER READY?
0526	03626	027642		JMP LPR3	YES
0527	03627	002400		CLA	NO
0528	03630	102610		OTA C1	OUTPUT A#0
0529	03631	025653		JMP SRRIN	RETURN
0530	03632	102500	LPR2	LIA 0	GET LP STATUS
0531	03633	002020		SSA	IS LINE PRINTER READY?
0532	03634	027637		JMP ++3	NO
0533	03635	002011		SLA,RSS	YES, IS LP ON-LINE?
0534	03636	027642		JMP LPR3	YES
0535	03637	002400		CLA	NO
0536	03640	102610		OTA C1	OUTPUT A#0
0537	03641	025653		JMP SRRIN	
0538*					
0539	03642	074114	LPR3	STB LTNUM	B => ITY#
0540	03643	000004		INB	B => CHARACTER COUNT
0541	03644	074115		SIB LCCNT	
0542	03645	006004		INB	B => RUNNING BUFFER POINTER
0543	03646	074116		SIB LBPNT	
0544	03647	000004		INB	B => START OF BUFFER
0545	03650	074117		STB LBSTR	
0546	03651	006004		INB	B => START OF FIRST BUFFER
0547	03652	074120		STB LBHED	
0548	03653	100116		LDA LBPNT,1	A = THE
0549	03654	003004		CMA,INA	STRING
0550	03655	140120		ADA LBHED,1	LENGTH
0551	03656	050153		CPA -1	IS THERE AN OUTPUT STRING?
0552	03657	002001		RSS	
0553	03660	027665		JMP LPR4	YES
0554	03661	060114		LDA LTNUM	NO = GET TTY# AND SET THE
0555	03662	070104		STA TLSUP	TEMPORARY LP SUSPENSION FLAG
0556	03663	102610		OTA C1	OUTPUT A#0 (POSITIVE)
0557	03664	027752		JMP OUIPE	
0558*					
0559	03665	040151	LPR4	ADA -3	A = -(STRING LENGTH + 3)
0560	03666	064201		LDB M136	IF STRING
0561	03667	044000		ADB A	IS 100 LONG,
0562	03670	006020		SSB	REJECT THE
0563	03671	027763		JMP LPR7	REQUEST
0564	03672	170115		STA LCCNT,1	
0565	03673	100120		LDA LBHED,1	CHANGE POINTERS
0566	03674	104117		LDB LBSTR,1	

0567	03675	174120	STB LBHED,I	FROM THEIR INPUT POSITIONS
0568	03676	164116	LDB LBPNT,I	
0569	03677	174117	STB LBSTR,I	TO THEIR OUTPUT POSITIONS
0570	03700	040153	ADA ,-1	
0571	03701	170115	STA LBPNT,I	
0572	03702	060151	LDA ,-3	SET COUNTER
0573	03703	070267	STA STEMF	TO -3
0574	03704	060166	LDA ,+12B	A * LINE FEED
0575	03705	002001	RSS	
0576	03706	060177	LPR5 LDA ,+23B	A * X-OFF
0577	03707	070125	STA LCHAR	SAVE THE CHARACTER
0578	03710	164117	LDB LBSTR,I	B * CHARACTER ADDRESS
0579	03711	004065	CLE,ERB	B * WORD ADDRESS
0580	03712	160001	LDA B,I	A * DESTINATION WORD
0581	03713	002041	SEZ,RSS	IF HIGH CHARACTER,
0582	03714	001727	ALF,ALF	ROTATE TO BOTTOM
0583	03715	010234	AND HIMSK	CLEAR LOWER 8 BITS
0584	03716	030125	IOR LCHAR	MERGE WITH NEW CHARACTER
0585	03717	002041	SEZ,RSS	IF HIGH CHARACTER,
0586	03720	001727	ALF,ALF	ROTATE BACK
0587	03721	170001	STA B,I	STORE BACK IN BUFFER
0588	03722	034267	ISZ STEMF	INCREMENT AND CHECK COUNTER
0589	03723	002001	RSS	COUNT ZERO?
0590	03724	027731	JMP LPR6	YES
0591	03725	164117	LDB LBSTR,I	NO * SET NEW
0592	03726	006004	INB	POINTER VALUE
0593	03727	174117	STB LBSTR,I	AND RETURN FOR
0594	03730	027706	JMP LPR5	NEXT CHARACTER
0595*				
0596	03731	064114	LPR6 LDB LTNUM	B * TTY#
0597	03732	074103	STB LPTTY	SET LP USER INDICATOR.
0598	03733	074100	STB LFLAG	SET LP INITIALIZATION FLAG
0599	03734	044164	ADB ,+7STAT	B * STATUS
0600	03735	160001	LDA B,I	CHANGE
0601	03736	010143	AND IONBT	STATUS TO
0602	03737	170001	STA B,I	OUTPUT
0603	03740	002404	CLA,INA	
0604	03741	102610	OTA C1	OUTPUT A#0 (POSITIVE)
0605	03742	064114	LDB LTNUM	IF TERMINAL IS
0606	03743	044170	ADB ,+7TYPE	A SELECTRIC - -
0607	03744	160001	LDA B,I	
0608	03745	002003	SZA,RSS	
0609	03746	027752	JMP OUTPE	
0610	03747	060224	LDA CRCLD	OUTPUT A
0611	03750	164114	LDB LTNUM,I	CIRCLE 0
0612	03751	115652	JSB IMUXR,I	
0613	03752		OUTPE EQU *	
0614	03752	060170	LDA ,+14B	2767A PAGE EJECT CODE
0615	03753	064102	LDB LPTYP	GET LP TYPE FLAG
0616	03754	006020	SSB	2778A OR 2610A LINE PRINTER?
0617	03755	027760	JMP PSC2	NO, 2767A
0618	03756	060230	LDA PEJCT	YES, A * 2778A PAGE EJECT CODE
0619	03757	040001	ADA B	ADD 1 FOR 2610A CODE
0620	03700	102000	PSC2 OTA W	PAGE
0621	03761	103700	PSC3 STC W,C	EJECT
0622	03762	025653	JMP SRRTN	

0023*
 0024 03763 102610 LPR7 OIA C1 OUTPUT A#0 (NEGATIVE)
 0025 03764 025653 JMP SRRTN

0001*
 0002** USER IS ABORTED

0003*
 0004 03765 ABT EQU *
 0005 03765 044164 ADB .+?STAT B=> ?STAT
 0006 03766 160001 LDA B,1 A=> ?STAT
 0007 03767 010226 AND 071M CLEAR STATUS BITS
 0008 03770 030104 IOR IOBT SET 'INPUT' BIT
 0009 03771 170001 STA B,1 STORE NEW STATUS
 0010 03772 064045 LDB XTNUM B=> ITY#
 0011 03773 054103 CPB LPTTY BRANCH IF
 0012 03774 002001 RSS USER HAS LP.
 0013 03775 025653 JMP SRRTN RETURN

0014*
 0015 03776 002400 CLA
 0016 03777 070103 STA LPTTY CLEAR
 0017 04000 070104 STA TLSUP LINE
 0018 04001 070105 STA ILPR PRINTER
 0019 04002 070106 STA LFLAG FLAGS
 0020 04003 070110 STA LPDRF
 0021 04004 054107 CPB LPERF RETURN IF
 0022 04005 002001 RSS ERROR FLAG
 0023 04006 025653 JMP SRRTN NOT SET
 0024 04007 070107 STA LPERF CLEAR FLAG
 0025 04010 060113 LDA LPBT1 RESTORE
 0026 04011 170116 STA LBPNT,1 POINTER
 0027 04012 025653 JMP SRRTN

0030*
 0031** LINE PRINTER DISCONNECT

0032*
 0033 04013 LPD EQU *
 0034 04013 006404 CLB,INB
 0035 04014 074111 STB LPDIS SET LP DISCONNECT FLAG
 0036 04015 025653 JMP SRRTN

0038*
 0039** LINE PRINTER STATUS REQUEST

0040*
 0041 04016 LPS EQU *
 0042 04016 002400 CLA
 0043 04017 064102 LDB LPTYP GET LP TYPE FLAG
 0044 04020 006020 SSB
 0045 04021 002004 INA PLACE TYPE
 0046 04022 001300 RAR IN BITS 14
 0047 04023 004010 SLB AND 15
 0048 04024 002004 INA
 0049 04025 001300 RAR
 0050 04026 030101 IOR PRISC ADD THE SELECT CODE
 0051 04027 102610 OIA C1 AND OUTPUT
 0052 04030 025653 JMP SRRTN

0054** START ENTER TIMING

0055*

0056	04031	STE	EQU *	
0057	04031	044164	ADB .+?STAT	B => STATUS
0058	04032	160001	LDA B,I	A = STATUS
0059	04033	030300	IOR ENBT	SET 'ENTER TIMING' BIT
0060	04034	170001	STA B,I	
0061	04035	026004	INB	B => ATIM
0062	04036	060266	LDA RCODE	LOAD REQUEST WORD
0063	04037	010216	AND B377	MASK TO TIME ALLOWED
0064	04040	001000	ALS	CONVERT
0065	04041	070267	STA STMP	TIME TO
0066	04042	001020	ALS,ALS	TENTHS OF
0067	04043	040267	ADA STMP	A SECOND
0068	04044	170001	SIA B,I	SET INTO ATIM
0069	04045	006004	INB	B => TIMO
0070	04046	003004	CMA,INA	A = -TIME
0071	04047	170001	SIA B,I	SET INTO TIMO
0072	04050	044152	ADB .+?STAT-?TIMO	
0073	04051	026174	JMP IWT+1	

0075*

0076** FEICH NEXT BUFFER CHARACTER

0077*

0078	04052	FNC	LDU *	
0079	04052		ADH .+?BEND	B => BUFFER END
0080	04053		STB STMP	SAVE IT
0081	04054		ADB .+?BHED=?BEND	B => PICKUP POINTER
0082	04055		LDA B,I	A => CHARACTER
0083	04056		CLE,ERA	A => WORD
0084	04057		LDA A,I	A = WORD
0085	04060		SEZ,RSS	EXTRACT
0086	04061		ALF,ALF	DESIRED
0087	04062		AND B377	CHARACTER
0088	04063		OIA C1	SEND CHARACTER TO INTERFACE
0089	04064		LDA B,I	INCREMENT CHARACTER
0090	04065		INA	ADDRESS
0091	04066		CPA STMP,I	IF BEYOND END OF
0092	04067		ADA MLEN	BUFFER, WRAP AROUND
0093	04070		STA B,I	RESET POINTER
0094	04071		JMP SKRIN	

0095*

0096** SET NEW PHONES TIMING VALUE

0097*

0098	04072	PHS	LDU *	
0099	04072		LDA RCODE	GET REQUEST WORD
0100	04073		AND B377	MASK TO TIME
0101	04074		ALS	CONVERT
0102	04075		SIA STMP	TIME TO
0103	04076		ALS,ALS	TENTHS OF
0104	04077		ADA SIEMP	A SECOND
0105	04100		CMA,INA	MAKE NEGATIVE
0106	04101		STA PHR	SET TIME ALLOWED FOR LOGON
0107	04102		JMP SKRTN	

0109*

0110** SET NEW BAUD RATE AND SET/RESET PARITY BIT.

0111*

0112	04103	SPE	LDU *	
0113	04103		LDA RCODE	GET REQUEST WORD
0114	04104		AND B377	MASK TO BAUD RATE
0115	04105		SIA STMP	SAVE
0116	04106		ADB .+?TYPE	B=> ?TYPE
0117	04107		LDA B,I	A = ?TYPE
0118	04110		ADB .+?SPRM=?TYPE	B=> ?SPRM
0119	04111		STB TEMP1	SAVE IT,
0120	04112		LDB A	B=?TYPE
0121	04113		LDA TEMP1,I	A = ?SPRM
0122	04114		IOR BIT12	SET PARITY BIT=1.
0123	04115		SZB	SET PARITY BIT=0 FOR TYPE#1.
0124	04110		AND NB12	
0125	04117		AND H1MSK	CLEAR OLD BAUD RATE
0126	04120		IOR STMP	MERGE WITH NEW BAUD RATE
0127	04121		LDB TEMP1	B=> ?SPRM
0128	04122		STA B,I	RESTORE SEND PARAMETER
0129	04123		SIA TEMP1	SAVE ?SPRM
0130	04124		ADB .+?RPRM=?SPRM	B => RECEIVE PARAMETER

```

0131 04125 160001 LDA B,I A = RECEIVE PARAMETER
0132 04126 010234 AND HIMSK REMOVE OLD BAUD RATE
0133 04127 030207 IOR STEMP MERGE NEW BAUD RATE,
0134 04130 170001 STA B,I RESTORE RECEIVE PARAMETER
0135 04131 044133 ADB .+?TNUM=?RPRM B => TTY#
0136 04132 164001 LDB B,I B = TTY#
0137 04133 074267 STB STEMP SAVE ?TNUM
0138 04134 115652 JSB IMUXR,I OUTPUT PARAMETER
0139 04135 060274 LDA TEMP1 A=?SPRM
0140 04136 064267 LDB STEMP B=?TNUM
0141 04137 115652 JSB IMUXR,I OUTPUT PARAMETER
0142 04140 025653 JMP SRRTN

```

0144*

0145** SAVE BUFFER POINTER

0146*

```

0147 04141 SBP EQU *
0148 04141 044160 ADB .+?BHED B => CURRENT PICKUP POINTER
0149 04142 160001 LDA B,I A = CURRENT PICKUP POINTER
0150 04143 006004 INB B => SAVE LOCATION
0151 04144 170001 STA B,I SAVE CURRENT POINTER
0152 04145 025653 JMP SRRTN

```

0154*

0155** RESTORE BUFFER POINTER

0156*

```

0157 04146 RBP EQU *
0158 04146 044161 ADB .+?BSAV B => SAVED PICKUP POINTER
0159 04147 160001 LDA B,I A = SAVED PICKUP POINTER
0160 04150 044153 ADB .+?BHED=?BSAV B => CURRENT PICKUP POINTER
0161 04151 170001 STA B,I SET PICKUP POINTER BACK
0162 04152 025653 JMP SRRTN

```

0164*

0165** USER IS RUNNING

0166*

```

0167 04153 UIR EQU *
0168 04153 044164 ADB .+?STAT A = STATUS
0169 04154 160001 LDA B,I SET 'USER IS RUNNING' BIT
0170 04155 030301 IOR RNBT STORE NEW STATUS
0171 04156 170001 SIA B,I
0172 04157 025653 JMP SRRTN

```

0174*

0175** USER IS NOT RUNNING

0176*

```

0177 04160 UNR EQU *
0178 04160 044164 ADB .+?STAT A = STATUS
0179 04161 160001 LDA B,I REMOVE 'USER IS RUNNING' BIT
0180 04162 010314 AND RNNBT REMOVE 'X-OFF' BIT
0181 04163 010320 AND XUNBT STORE NEW STATUS
0182 04164 170001 STA B,I
0183 04165 044144 ADB .+?TNUM=?STAT
0184 04166 054103 CPB LPTTY
0185 04167 074111 STB LPDIS
0186 04170 054104 CPB TLSUP

```

0187 04171 074111
0188 04172 025653

STB LPDIS
JMP SRRIN

0190*

0191** USER IS IN INPUT WAIT - CONFIGURE FOR INPUT

0192*

0193	04173		IWI	EQU *	
0194	04173	044164		ADB .+?STAT	B => STATUS
0195	04174	160001		LDA B,I	A = STATUS
0196	04175	030164		IOR IOBT	SET 'INPUT MODE' BIT
0197	04176	150001		CPA B,I	BRANCH IF USER IS
0198	04177	026204		JMP IWT1	NOT IN OUTPUT MODE
0199	04200	160001		LDA B,I	B = STATUS
0200	04201	030311		IOR ICBT	SET 'INPUT CONFIGURATION' BIT
0201	04202	170001		STA B,I	STORE NEW STATUS
0202	04203	025653		JMP SRRTN	
0203*					
0204	04204	010316	IWT1	AND NINBT	REMOVE 'NO INPUT ALLOWED' BIT
0205	04205	170001		STA B,I	STORE NEW STATUS
0206	04206	044165		ADB .+?RPRM=?STAT	
0207	04207	160001		LDA B,I	A = RECEIVE PARAMETER
0208	04210	044133		ADB .+?TNUM=?RPRM	
0209	04211	104001		LDB B,I	B = UNIT NUMBER
0210	04212	115652		JSB IMUXR,I	OUTPUT TO MULTIPLEXER
0211	04213	025653		JMP SRRTN	

0213*

0214**

0215*** HANG USER UP

0216**

0217*

0218* THE LOGON TIMING IS ALLOWED TO CONTINUE FOR ILLEGAL ACCESS AND
 0219* THE LIKE, BEING TURNED OFF ONLY BY THE SYSTEM WHEN IT HAS
 0220* COMPLETED LOGGING ON THE USER.

0221*

0222* THE HANG USER UP ROUTINE SETS A BIT IN HIS STATUS THAT CAUSES
 0223* THE PHONES LOGIC TO HANG UP THE CLOD WHEN HE HAS STOPPED TYPING.

0224*

0225	04214		HUU	EQU *	
0226	04214	044164		ADB .+?STAT	
0227	04215	160001		LDA B,I	A = STATUS
0228	04216	030304		IOR HUBT	SET 'HANG USER UP' BIT
0229	04217	010314		AND RNNBT	REMOVE 'USER IS RUNNING' BIT
0230	04220	170001		STA B,I	STORE NEW STATUS
0231	04221	025653		JMP SRRTN	

0233*

0234** USER IS LOGGED ON - STOP AUTO-DISCONNECT TIMING

0235*

0236	04222		ULO	EQU *	
0237	04222	044164		ADB .+?STAT	
0238	04223	160001		LDA B,I	A = STATUS
0239	04224	010312		AND LTNBT	REMOVE 'LOG TIMING' BIT
0240	04225	170001		STA B,I	STORE NEW STATUS
0241	04226	044160		ADB .+?TYPE=?STAT	B=> ?TYPE
0242	04227	160001		LDA B,I	A = ?TYPE
0243	04230	002003		SZA,RSS	WHICH TYPE?
0244	04231	025653		JMP SRRTN	TYPE#1.
0245	04232	030156		IOR CDBT	TYPE#2. SET CDBT BIT.

0240 04233 170001 STA B,I
 0247 04234 025653 JMP SRRTN

0249*

0250** ECCO ON

0251*

0252 04235 EQU *
 0253 04235 044175 ADB .+?RPRM
 0254 04236 160001 LDA B,I A * RECEIVE PARAMETER
 0255 04237 030300 IOR EOBIT SET 'ECCO' BIT
 0256 04240 170001 STA B,I RESTORE PARAMETER
 0257 04241 025653 JMP SRRTN

0259*

0260** ECCO OFF

0261*

0262 04242 ECF EQU *
 0263 04242 044175 ADB .+?RPRM
 0264 04243 160001 LDA B,I A * RECIEVE PARAMETER
 0265 04244 010321 AND EFBIT REMOVE 'ECCO' BIT
 0266 04245 170001 STA B,I RESTORE PARAMETER
 0267 04246 025653 JMP SRRTN

0269*

0270** TAPE MODE ON

0271*

0272 04247 TPU EQU *
 0273 04247 044164 ADB .+?STAT
 0274 04250 160001 LDA B,I A * STATUS
 0275 04251 030155 IOR TPBT SET 'TAPE MODE' BIT
 0276 04252 170001 STA B,I STORE NEW STATUS
 0277 04253 025653 JMP SRRTN

0279*

0280** ILLEGAL INPUT WHILE IN TAPE MODE

0281*

0282 04254 ILI EQU *
 0283 04254 044156 ADB .+?BPNT B => CURRENT STORE POINTER
 0284 04255 160001 LDA B,I
 0285 04256 006004 INB B => START OF LAST LINE
 0286 04257 150001 CPA B,I HAS A NEW LINE STARTED?
 0287 04260 026263 JMP NILI NO
 0288 04261 102610 UTA C1 YES - TELL OTHER MACHINE ILLEGAL
 0289 04262 025653 JMP SRRTN

0290*

0291 04263 NILI ADB .+?STAT-?BSTR
 0292 04264 160001 LDA B,I A * USER'S STATUS
 0293 04265 010152 AND TPNBT REMOVE 'TAPE MODE' BIT
 0294 04266 170001 STA B,I STORE NEW STATUS
 0295 04267 002400 CLA TELL OTHER MACHINE
 0296 04270 102610 UTA C1 NO MORE INPUT
 0297 04271 025653 JMP SRRTN

```

0299*
0300**      NEW USER CALLED
0301*
0302      04272          NUC      EQU *
0303      04272 044164      ADB .+?STAT
0304      04273 160001      LDA B,I          A = STATUS
0305      04274 030277      IOR LIBT          SET 'LOGON' BIT
0306      04275 170001      STA B,I          STORE NEW STATUS
0307      04276 044157      ADB .+?PHUN=?STAT B => PHONES TIMING WORD
0308      04277 060262      LDA PHR          GET TIMING VALUE
0309      04300 170001      SIA B,I          AND STORE IN WORD
0310      04301 025653      JMP SRRTN

```

```

0312*
0313**      KILL ALL OUTPUT
0314*
0315      04302          KAU      EQU *
0316      04302 044155      ADB .+?CCNT      B => CHARACTER COUNT
0317      04303 003400      CCA              SET CHARACTER
0318      04304 170001      STA B,I          COUNT TO ONE
0319      04305 044163      ADB .+?STAT=?CCNT
0320      04306 160001      LDA B,I          CLEAR ALL BUT
0321      04307 010227      AND KMASK        NECESSARY BITS
0322      04310 170001      STA B,I
0323      04311 025653      JMP SRRTN

```

```

0325*
0326**      ALLOW INPUT
0327*
0328      04312          ALI      EQU *
0329      04312 044160      ADB .+?BHED
0330      04313 160001      LDA B,I          A = CURRENT PICKUP POINTER
0331      04314 006004      INB              B => BSAV
0332      04315 170001      STA B,I          SAVE CURRENT LOCATION
0333      04316 044152      ADB .+?BSTK=?BSAV
0334      04317 160001      LDA B,I          LOAD BUFFER POINTER
0335      04320 006004      INB              B => BHED
0336      04321 150001      CPA B,I          IS ANOTHER BUFFER FULL?
0337      04322 025653      JMP SRRTN        NO = RETURN
0338      04323 044150      ADB .+?TNUM=?BHED
0339      04324 160001      LDA B,I          A = TTY#
0340      04325 031662      IOR HVL          ADD COMPLETE LINE INDICATOR
0341      04326 115651      JSB 10MTM,I      AND TELL OTHER MACHINE
0342      04327 025653      JMP SRRTN

```

0344*

0345** SET USER INTO OUTPUT WAIT

0346*

0347	04330		OWI	EQU *	
0348	04330	044155		ADD .+?CCNT	
0349	04331	160001		LDA B,1	A = CHARACTER COUNT
0350	04332	040160		ADA .+10	IS CHARACTER
0351	04333	002020		SSA	COUNT <= 10?
0352	04334	020342		JMP OWTA	NO = SET OUTPUT WAIT
0353	04335	044153		ADB .+?1NUM=?CCNT	YES
0354	04336	160001		LDA B,1	B = USER'S ITY#
0355	04337	031065		IOR BFE	ADD 'BUFFER EMPTY' CODE
0356	04340	110051		JSB IUMTM,I	AND TELL OTHER MACHINE
0357	04341	025053		JMP SRRTN	

0358*

0359 04342 044163 OWTA ADB .+?STAT=?CCNT

0360	04343	160001		LDA B,1	A = STATUS
0361	04344	030150		IOR ST01	SET 'STOPPED' BIT
0362	04345	170001		STA H,1	STORE NEW STATUS
0363	04346	025053		JMP SRRTN	

0365*

0366** IS BUFFER FULL?

0367*

0368	04347		IBF	EQU *	
0369	04347	044155		ADB .+?CCNT	
0370	04350	160001		LDA B,1	A = CHARACTER COUNT
0371	04351	040351		ADA BLEN	CHECK FOR BUFFER FULL
0372	04352	040152		ADA .-2	
0373	04353	001200		RAL	LEAVE ONLY THE SIGN BIT,
0374	04354	010155		AND .+1	ONE = FULL, ZERO = NOT FULL
0375	04355	102010		OTA C1	OUTPUT RESULT
0376	04356	025053		JMP SRRTN	

0378*

0379** BACKSPACE

0380*

0381	04357		BKs	EQU *	
0382	04357	044160		ADB .+?BHED	
0383	04360	160001		LDA B,1	A = BUFFER POINTER
0384	04361	044150		ADB .+?BGIN=?BHED	B => BUFFER BEGINNING
0385	04362	150001		CPA B,1	IF FIRST LOCATION IN
0386	04363	040351		ADA BLEN	BUFFER, MOVE TO END
0387	04364	040153		ADA .-1	BACK UP ONE CHARACTER
0388	04365	044152		ADB .+?BHED=?BGIN	
0389	04366	170001		STA H,1	STORE NEW PICKUP POINTER
0390	04367	025053		JMP SRRTN	

```

0392*
0393*
0394**   SET CHAR. SIZE.
0395**   ADJUST TYPE AND ECHO BIT.
0396*
0397 04370      CHS   EQU *
0398 04370 060266 LDA RCODE   GET REQ. CODE.
0399 04371 010215 AND B340   ISOLATE CHAR. SIZE.
0400 04372 001723 ALF, RAR   ROTATE INTO BITS 8-10.
0401 04373 070267 STA STEMP  SAVE IT.
0402 04374 044170 ADB ,+?TYPE B=> ?TYPE
0403 04375 074274 STB TEMP1  SAVE IT.
0404 04376 006400 CLB
0405 04377 002003 SZA, RSS  SET ?TYPE TO 0 IF CHAR.SIZE NOT
0406 04400 006004 INB      #0 AND TO 1 IF
0407 04401 174274 STB TEMP1, I CHAR.SIZE#0.
0408 04402 064274 LDB TEMP1 B=> ?TYPE
0409 04403 044161 ADB ,+?RPRM=?TYPE B=> ?RPRM
0410 04404 074274 STB TEMP1  SAVE IT.
0411 04405 160001 LDA B, I   A= ?RPRM
0412 04406 010233 AND MASK1
0413 04407 030267 IOR STEMP  SET CHAR. SIZE.
0414 04410 010321 AND NOT12  RESET ECHO BIT.
0415 04411 064267 LDB STEMP
0416 04412 006002 SZB      IF CHAR.SIZE NOT #0, SET ECHO.
0417 04413 030306 IOR BIT12
0418 04414 170274 STA TEMP1, I SET ?RPRM
0419 04415 034274 JSZ TEMP1
0420 04416 160274 LDA TEMP1, I A= ?SPRM
0421 04417 010233 AND MASK1
0422 04420 030267 IOR STEMP
0423 04421 170274 STA TEMP1, I SET ?SPRM.
0424 04422 025653 JMP SRRTN

```

```

0426*
0427**   SERVICE ROUTINE TO SET UP THE CR AND
0428**   LF DELAYS IN THE TTY TABLE.
0429*

```

```

0430 04423      STP   EQU *
0431 04423 044170 ADB ,+?TYPE  B=> ?TYPE
0432 04424 160001 LDA B, I    A= ?TYPE
0433 04425 002002 SZA        TYPE#1?
0434 04426 025653 JMP -SRRTN  NO. RETURN!
0435 04427 060266 LDA RCODE   YES. A= REQ. WORD.
0436 04430 001727 ALF, ALF   ROTATE SUBTYPE INTO LOWER.
0437 04431 001723 ALF, RAR
0438 04432 010163 AND ,+7    ISOLATE.
0439 04433 070267 STA STEMP  SAVE IT.
0440 04434 044150 ADB ,+?STAT=?TYPE B=> ?STAT
0441 04435 160001 LDA B, I   A= ?STAT
0442 04436 001700 ALF      SET
0443 04437 010237 AND MASK2
0444 04440 030267 IOR STEMP  SUBTYPE
0445 04441 001727 ALF, ALF
0446 04442 001700 ALF
0447 04443 170001 STA B, I   CODE,

```



```

0448 04444 044165      ADB ,+?RPRM=?STAT  B=> ?RPRM
0449 04445 074274      STB TEMP1          SAVE IT.
0450 04446 100001      LDA B,1            A= ?RPRM
0451 04447 010216      AND B377           GET BAUD RATE.
0452 04450 040235      ADA M277           ADJUST FOR TABLE LOOK UP.
0453 04451 006477      LDB BAUDT          B=> BEGINNING OF TABLE.
0454 04452                STP1 EQU *
0455 04452 140001      ADA B,1
0456 04453 002021      SSA,RSS            RIGHT RANGE?
0457 04454 020457      JMP STP2           YES.
0458 04455 044165      ADB ,+7            NO. BUMP POINTER TO NEXT ENTRY.
0459 04456 026452      JMP STP1           GO BACK.
0460 04457                STP2 EQU *
0461 04457 008004      INB
0462 04460 044267      ADB STEMP          B=> DELAY
0463 04461 160001      LDA B,1            A= DELAY
0464 04462 070267      STA STEMP          SAVE IT.
0465 04463 004274      LDB TEMP1          B=> ?RPRM
0466 04464 044150      ADB ,+?CDLY=?RPRM B=> ?CDLY
0467 04465 001727      ALF,ALF           GET
0468 04466 010216      AND B377           AND
0469 04467 003004      CMA,INA           SET
0470 04470 170001      STA B,1           CR DELAY(NEGATIVE!).
0471 04471 006004      INB                B=> ?LDLY
0472 04472 060267      LDA STEMP          GET
0473 04473 010216      AND B377           AND SET
0474 04474 003004      CMA,INA
0475 04475 170001      STA B,1           LF DELAY(NEGATIVE!).
0476 04476 025653      JMP SRKIN          RETURN.

```

0477*

0478*

0479* CR DELAY IN UPPER AND LF DELAY IN LOWER.

0480*

0481 04477 004500 BAUDT DEF **1
0482 04500 000075 OCT 75 *277-202

0483*

0484* DELAYS FOR 110 BAUD.

0485*

0486 04501 000400 OCT 400 FOR SUBTYPE 0.
0487 04502 000000 OCT 0 FOR SUBTYPE 1.
0488 04503 000000 OCT 0 SET UP 0 DELAY.
0489 04504 000001 OCT 1 FOR SUBTYPE 3.
0490 04505 000011 OCT 11 FOR SUBTYPE 4.
0491 04506 000400 OCT 400 FOR SUBTYPE 5.

0492*

0493 04507 000043 OCT 43 *202-137

0494*

0495* DELAYS FOR 150 BAUD.

0496*

0497 04510 000000 OCT 0 FOR SUBTYPE 0.
0498 04511 001000 OCT 1000 FOR SUBTYPE 1.
0499 04512 000400 OCT 400 FOR SUBTYPE 2.
0500 04513 000003 OCT 3 FOR SUBTYPE 3.
0501 04514 000015 OCT 15 FOR SUBTYPE 4.
0502 04515 001000 OCT 1000 FOR SUBTYPE 5.

0503*

0504	04510	000060	OCT 60	=137-57
0505*				
0506*	DELAYS FOR 300 BAUD.			
0507*				
0508	04517	000000	OCT 0	FOR SUBTYPE 0.
0509	04520	002000	OCT 2000	FOR SUBTYPE 1.
0510	04521	000000	OCT 0	SET UP 0 DELAY.
0511	04522	000010	OCT 10	FOR SUBTYPE 3.
0512	04523	000034	OCT 34	FOR SUBTYPE 4.
0513	04524	007007	OCT 7007	FOR SUBTYPE 5.
0514*				
0515	04525	000030	OCT 30	=57-27
0516*				
0517*	DELAYS FOR 600 BAUD.			
0518*				
0519	04526	000000	OCT 0	FOR SUBTYPE 0.
0520	04527	000000	OCT 0	SET UP 0 DELAY.
0521	04530	000000	OCT 0	SET UP 0 DELAY.
0522	04531	000000	OCT 0	SET UP 0 DELAY.
0523	04532	000067	OCT 67	FOR SUBTYPE 4.
0524	04533	000000	OCT 0	SET UP DELAY.
0525*				
0526	04534	000014	OCT 14	=27-13
0527*				
0528*	DELAYS FOR 1200 BAUD.			
0529*				
0530	04535	000004	OCT 4	FOR SUBTYPE 0.
0531	04536	000000	OCT 0	
0532	04537	000000	OCT 0	
0533	04540	000000	OCT 0	
0534	04541	000000	OCT 0	
0535	04542	000000	OCT 0	
0536*				
0537	04543	000000	OCT 6	=13-5
0538*				
0539*	DELAYS FOR 2400 BAUD.			
0540*				
0541	04544	000004	OCT 4	FOR SUBTYPE 0.
0542	04545	000000	OCT 0	
0543	04546	000000	OCT 0	
0544	04547	000000	OCT 0	
0545	04550	000000	OCT 0	
0546	04551	000000	OCT 0	

0548*

0549** WHAT SPEED?

0550*

0551	04552	WSP	EQU *	
0552	04552	044175	ADB ,+?RPRM	B=> ?RPRM
0553	04553	100001	LDA B,1	A= ?RPRM
0554	04554	010210	AND B377	ISOLATE BAUD RATE.
0555	04555	102610	OTA C1	TELL 2116.
0556	04556	025653	JMP SRRTN	RETURN.

0557*

0559*

0560** WHAT CHARACTER SIZE?

0561*

0562	04557	WCS	EQU *	
0563	04557	044175	ADB ,+?RPRM	B=> ?RPRM
0564	04560	160001	LDA B,1	A= ?RPRM
0565	04561	001727	ALF,ALF	ROTATE INTO LOWER.
0566	04562	010210	AND B7	ISOLATE.
0567	04563	102610	OTA C1	TELL 2116.
0568	04564	025653	JMP SRRTN	

0570*

0571** WHAT TERMINAL TYPE?

0572*

0573	04565	WTP	EQU *	
0574	04565	044170	ADB ,+?TYPE	B=> ?TYPE
0575	04566	100001	LDA B,1	A= ?TYPE
0576	04567	102610	OTA C1	TELL 2116.
0577	04570	025653	JMP SRRTN	RETURN.
0578	04571	SEND	EQU *	

0580*

0581** TELEKLUDGE OUTPUT

0582*

0583*

0584* IF A SELECTIVE CORE DUMP OF THE SYSTEM IS TAKEN, AND IF

0585* A LINE PRINTER IS CONNECTED - THIS ROUTINE IS USED TO

0586* PRINT THE DUMP ON THE LINE PRINTER.

0587*

0588*

0589	04571		TK0	EQU *	
0590	04571	060266		LDA RCODE	
0591	04572	001727		ALF, ALF	
0592	04573	001723		ALF, RAR	
0593	04574	010214		AND B177	A = CHARACTER
0594	04575	050171		CPA .+15B	BRANCH IF
0595	04576	026606		JMP TK04	CHAR IS 'CH
0596	04577	050166		CPA .+12B	BRANCH IF
0597	04600	026606		JMP TK04	CHAR. IS "LF".
0598	04601	102300	TK01	SFS 0	WAIT UNTIL
0599	04602	026601		JMP *-1	NO1 BUSY
0600	04603	102600	TK02	OTA 0	OUTPUT
0601	04604	103700	TK03	STC 0,C	CHARACTER
0602	04605	025653		JMP SRRTN	RETURN
0603*					
0604	04606	004102	TK04	LDB LPTYP	IS LP A 2767A?
0605	04607	006020		SSB	
0606	04610	026601		JMP TK01	YES
0607	04611	050166		CPA .+12B	NO. IS CHAR. A "LF"?
0608	04612	025653		JMP SKRTN	YES, IGNORE,
0609	04613	060157		LDA .+3	NO. OUTPUT 100001B.
0610	04614	001300		RAR	
0611	04615	026601		JMP TK01	

```

0013*
0014* DSC BOARD#1.
0015*
0016 04616 000000 DS101 NOP
0017 04617 070254 STA PHA1 SAVE REGISTERS.
0018 04620 074255 STB PHB1
0019 04621 001500 ERA
0020 04622 070250 STA PHE1
0021 04623 102515 LIA DSCB1 GET NEW STATUS.
0022 04624 070203 STA PHIM1 SAVE.
0023 04625 001722 ALF,RAL ROTATE UNIT NR.
0024 04626 001200 RAL INTO RIGHT END.
0025 04627 010173 AND .+10 ISOLATE.
0026 04630 040347 ADA TTYTP ADD ON TABLE ADDRESS.
0027 04631 104000 LDB A,I B=> ?TNUM
0028 04632 044177 ADB .+?PPRM B=> ?PPRM
0029 04633 100001 LDA B,I A= ?PPRM
0030 04634 010157 AND .+3 ISOLATE STORED STATUS BITS.
0031 04635 070245 STA DSTP1 SAVE.
0032 04636 044141 ADB .+?STAT-?PPRM B=> ?STAT
0033 04637 000203 LDA PHIM1 GET NEW STATUS.
0034 04640 010157 AND .+3 ISOLATE STATUS BITS.
0035 04641 070247 STA DSTS1 SAVE.
0036 04642 020245 XOR DSTP1
0037 04643 002003 SZA,RSS TAKE CARE OF NOISE!
0038 04644 026660 JMP DS102
0039 04645 002011 SLA,RSS WHICH BITS CHANGED?
0040 04646 026652 JMP DS107 CARRIER!
0041 04647 001310 KAR,SLA DSR! ALSO CARRIER?
0042 04650 026732 JMP DS105 DSR+CARRIER!
0043 04651 020710 JMP DS104 DSR!
0044 04652 DS107 EQU *
0045 04652 010245 AND DSTP1
0046 04653 001310 KAR,SLA
0047 04654 026672 JMP DS103 CHANGED FROM 1 TO 0.
0048*
0049* CHANGED FROM 0 TO 1.
0050* DSR(OLD)=1 CARRIER(OLD)=0
0051* DSR(NEW)=1 CARRIER(NEW)=1
0052*
0053* CONNECTION MADE OR CONNECTION RESTORED
0054* WITHIN LINE DROP-OUT TIMING.
0055*
0056 04655 100001 LDA H,I A= ?STAT
0057 04656 010133 AND LDNBT REMOVE LDBT BIT.
0058 04657 170001 STA B,I
0059*
0060*
0061* EXIT.
0062 04660 DS102 EQU *
0063 04660 060263 LDA PHIM1 A=NEW STATUS.
0064 04661 044167 ADB .+?PPRM-?STAT B=> ?PPRM
0065 04662 170001 STA B,I SAVE.
0066 04663 102615 OTA DSCB1 OUTPUT TO BOARD.
0067 04664 060256 LDA PHE1 RESTORE REGISTERS.
0068 04665 001600 ELA

```

```

0669 04666 060254 LDA PHA1
0670 04667 064255 LDB PHB1
0671 04670 103115 CLF DSCB1 ENABLE INTERRUPTS.
0672 04671 126616 JMP DS101,1 RETURN.
0673*
0674*
0675* DSR(OLD)=1 CARRIER(OLD)=1
0676* DSR(NEW)=1 CARRIER(NEW)=0
0677*
0678* LINE DROP-OUT OR HANG UP.
0679*
0680 04672 DS103 EQU *
0681 04672 160001 LDA B,I A= ?STAT
0682 04673 013061 AND PLTLD
0683 04674 002002 SZA PDBT OR LTBT OR LDBT SET?
0684 04675 026660 JMP DS102 YES, EXIT.
0685 04676 103100 CLF 0
0686 04677 160001 LDA B,I NO, A= ?STAT
0687 04700 030174 IOR LDBT SET LDBT.
0688 04701 170001 SIA B,I
0689 04702 044157 ADB .+?PHUN=?STAT B=> ?PHON
0690 04703 060130 LLA .-20 SET 2 SECONDS TIMING.
0691 04704 170001 SIA B,I
0692 04705 102100 STF 0
0693 04706 044151 ADB .+?STAT=?PHON B=> ?STAT
0694 04707 026660 JMP DS102 EXIT.
0695*
0696 04710 DS104 EQU *
0697 04710 001200 RAL
0698 04711 010245 AND DSTP1 WHICH WAY?
0699 04712 000010 SLA
0700*
0701* CHANGED FROM 1 TO 0.
0702* "HOUSE WIFE HUNG UP" OR HARDWIRED TERMINAL
0703* REMOVED.
0704*
0705* DSR(OLD)=1 CARRIER(OLD)=0
0706* DSR(NEW)=0 CARRIER(NEW)=0
0707*
0708* TREAT LIKE LINE DROP-OUT OR HANG UP.
0709*
0710 04713 026672 JMP DS103
0711*
0712* CHANGED FROM 0 TO 1.
0713* PHONE JUST ANSWERED OR HARDWIRED TERMINAL CONNec-
0714* TED.
0715*
0716* DSR(OLD)=0 CARRIER(OLD)=0
0717* DSR(NEW)=1 CARRIER(NEW)=0
0718*
0719 04714 DS106 EQU *
0720 04714 160001 LDA B,I A= ?STAT
0721 04715 010212 AND LTLDB
0722 04716 002002 SZA LTBT OR LDBT SET?
0723 04717 026660 JMP DS102 YES, EXIT.
0724 04720 160001 LDA B,I NO, A= ?STAT

```

```

0725 04721 103100      CLF 0
0726 04722 030277      LOR LTBT      SET LTBT BIT.
0727 04723 170001      SIA B,I
0728 04724 044157      ADB ,+?PHON=?STAT  B=> ?PHON
0729 04725 000202      LDA PHR
0730 04726 170001      SIA H,I      SET LOG-ON TIMING.
0731 04727 102100      SIF 0
0732 04730 044151      ADB ,+?STAT=?PHON  B=> ?STAT
0733 04731 020660      JMP DS102     EXIT.
0734*
0735*
0736 04732      DS105 EQU *
0737 04732 001200      RAL
0738 04733 010245      AND DSTP1     WHICH WAY?
0739 04734 002002      SZA
0740*
0741*
0742*      CHANGED FROM 1 TO 0.
0743* DSR(OLD)=1  CARRIER(OLD)=1
0744* DSR(NEW)=0  CARRIER(NEW)=0
0745*
0746*
0747* TREAT LIKE LINE DROP-OUT OR HANG UP.
0748*
0749*
0750 04735 026672      JMP DS103
0751*
0752*
0753*      CHANGED FROM 0 TO 1.
0754* DSR(OLD)=0  CARRIER(OLD)=0
0755* DSR(NEW)=1  CARRIER(NEW)=1
0756*
0757*
0758* TREAT LIKE PHONE JUST ANSWERED!
0759*
0760 04736 020714      JMP DS106
0761 04737      DS1E EQU *
0762*
0763*
0764*
0765*
0766* DSC BOARD#2.
0767*
0768 04737 000000      DS201 NOP
0769 04740 070257      STA PHA2     SAVE REGISTERS.
0770 04741 074260      STB PHB2
0771 04742 001500      ERA
0772 04743 070261      STA PHE2
0773 04744 102520      LIA DSCB2     GET NEW STATUS.
0774 04745 070264      STA PHTM2     SAVE.
0775 04746 001722      ALF,RAL      ROTATE UNIT NR.
0776 04747 001200      RAL          INTO RIGHT END.
0777 04750 010173      AND ,+15     ISOLATE.
0778 04751 040347      ADA TTYTP    ADD ON TABLE ADDRESS.
0779 04752 040174      ADA ,+16     GET TO UPPER PART OF TABLE.
0780 04753 104000      LUB A,I      B=> ?TNUM

```

0761	04754	044177	ADB	,+?PPRM	B=> ?PPRM
0762	04755	160001	LDA	B,I	A= ?PPRM
0763	04756	010157	AND	,+3	ISOLATE STORED STATUS BITS,
0764	04757	070246	SIA	DSTP2	SAVE,
0765	04760	044141	ADB	,+?STAT-?PPRM	B=> ?STAT
0766	04761	060264	LDA	PHM2	GET NEW STATUS,
0767	04762	010157	AND	,+3	ISOLATE STATUS BITS,
0768	04763	070250	SIA	DSTS2	SAVE,
0769	04764	020246	XOR	DSTP2	
0790	04765	002003	SZA	RSS	TAKE CARE OF NOISE!
0791	04766	027002	JMP	DS202	
0792	04767	002011	SLA	RSS	WHICH BITS VANGED?
0793	04770	026774	JMP	DS207	CARRIER!
0794	04771	001310	RAR	SLA	DSR! ALSO CARRIER?
0795	04772	027054	JMP	DS205	DSR+CARRIER!
0796	04773	027032	JMP	DS204	DSR!
0797	04774		DS207 EQU *		
0798	04774	010246	AND	DSTP2	
0799	04775	001310	RAR	SLA	
0800	04776	027014	JMP	DS203	CHANGED FROM 1 TO 0.
0801*					
0802*					CHANGED FROM 0 TO 1.
0803*					
0804	04777	160001	LDA	B,I	A= ?STAT
0805	05000	010133	AND	LDNBT	REMOVE LDBT BIT.
0806	05001	170001	STA	B,I	
0807*					
0808*					
0809*					EXIT.
0810*					
0811	05002		DS202 EQU *		
0812	05002	060264	LDA	PHM2	A=NEW STATUS.
0813	05003	044167	ADB	,+?PPRM-?STAT	B=> ?STAT
0814	05004	170001	SIA	B,I	SAVE.
0815	05005	102620	OIA	DSCB2	OUTPUT TO BOARD.
0816	05006	060261	LDA	PH2	RESTORE REGISTERS.
0817	05007	001600	ELA		
0818	05010	060257	LDA	PHA2	
0819	05011	064260	LDB	PHB2	
0820	05012	103120	CLF	DSCB2	ENABLE INTERRUPTS.
0821	05013	120737	JMP	DS201,I	RETURN.
0822*					
0823*					
0824	05014		DS203 EQU *		
0825	05014	100001	LDA	B,I	A= ?STAT
0826	05015	013061	AND	PLILD	
0827	05016	002002	SZA		POBT OR LTBT OR LDBT SET?
0828	05017	027002	JMP	DS202	YES, EXIT.
0829	05020	103100	CLF	0	
0830	05021	160001	LDA	B,I	NO, A= ?STAT
0831	05022	030174	IOR	LDBT	SET LDBT.
0832	05023	170001	STA	B,I	
0833	05024	044157	ADB	,+?PHON-?STAT	B=> ?PHON
0834	05025	060130	LDA	, -20	SET 2 SECONDS TIMING.
0835	05026	170001	SIA	B,I	
0836	05027	102100	STF	0	


```

0837 05030 044151      ADB .+?STAT-?PHON  B=> ?STAT
0838 05031 027002      JMP DS202          EXIT.
0839*
0840 05032              DS204 EQU *
0841 05032 001200      RAL
0842 05033 010240      AND DSTP2          WHICH WAY?
0843 05034 000010      SLA
0844 05035 027014      JMP DS203          CHANGED FROM 1 TO 0.
0845*
0846 05036              DS206 EQU *
0847 05036 160001      LDA B,I            CHANGED FROM 0 TO 1.
0848 05037 010212      AND LTLDB          A= ?STAT
0849 05040 002002      SZA                LIBT OT LDBT SET?
0850 05041 027002      JMP DS202          YES. EXIT.
0851 05042 160001      LDA B,I            NO. A= ?STAT
0852 05043 103100      CLF 0
0853 05044 030277      IOR LTBT           SET LTBT.
0854 05045 170001      STA B,I
0855 05046 044157      ADB .+?PHON-?STAT B=> ?PHON
0856 05047 060262      LDA PHR
0857 05050 170001      STA B,I            SET LOG-ON TIMING.
0858 05051 102100      STP 0
0859 05052 044151      ADB .+?STAT-?PHON B=> ?STAT
0860 05053 027002      JMP DS202          EXIT.
0861*
0862*
0863 05054              DS205 EQU *
0864 05054 001200      RAL
0865 05055 010240      AND DSTP2          WHICH WAY?
0866 05056 002002      SZA
0867 05057 027014      JMP DS203          CHANGED FROM 1 TO 0.
0868 05058 027036      JMP DS206          CHANGED FROM 0 TO 1.
0869*
0870 05061 000460      PLTLD OCT 460     PDBT+LTBT+LDBT
0871*
0872 05062              DS2E EQU *

```

```

0002*
0003* ENTER WITH A=INPUT CHAR, AND B=?TYPE
0004* ?TYPE POINTER MUST HAVE BEEN STORED IN XTYPE
0005* PRIOR TO ENTRY.
0006*
0007 05002 000000 ICNVR NOP
0008 05003 013651 AND B77 MASK OFF PARITY BIT(=BIT#6).
0009 05004 070070 STA XCHAR SAVE CHARACTER,
0010 05005 005310 RBR,SLB CODE DETERMINED?
0011 05006 027125 JMP SELN1 YES.
0012*
0013* CODE DETERMINATION.
0014*
0015 05007 064070 LDB XCHAR NO, B=INPUT CHAR,
0016 05008 160047 LDA XBPNT,I B=> ?BPNT
0017 05009 150053 CPA XBGIN,I IST INPUT CHAR.?
0018 05010 002001 RSS
0019 05011 027134 JMP SCK01 NO.
0020 05012 160057 LDA XTYPE,I YES, A=?TYPE
0021 05013 030307 IOR DIBT
0022 05014 150057 CPA XTYPE,I "CIRCLE D" RECEIVED?
0023 05015 027102 JMP SELN2
0024 05100 170057 STA XTYPE,I NO. SET DIBT AND OUT.
0025 05101 027415 JMP SCK11
0026 05102 SELN2 EQU *
0027 05103 054211 CPB LC YES, ="LC"?
0028 05104 027417 JMP SCK13 YES.
0029 05105 057634 CPB UC NO, ="UC"?
0030 05106 027413 JMP SCK12 YES.
0031 05107 057637 CPB B46 NO, ="H" IN CALL/360?
0032 05108 027117 JMP SELN3 YES.
0033 05109 054210 CPB B7 NO, ="H" IN EBCD?
0034 05110 002001 RSS
0035 05111 027117 JMP SELN3 NO. ASSUME CALL/360.
0036 05112 001366 RAR,CLE,ELA YES, EBCD; CLEAR BIT0 AND
0037 05113 002300 CCE SET BIT#15.
0038 05114 001225 KAL,ERA
0039 05115 027123 JMP SELN4
0040 05116 SELN3 EQU *
0041 05117 160057 LDA XTYPE,I SET BIT#0 AND
0042 05118 001265 RAR,CLE,ERA CLEAR BIT#15.
0043 05119 002300 CCE
0044 05120 001326 RAR,ELA
0045 05121 SELN4 EQU *
0046 05122 170057 STA XTYPE,I
0047 05123 027143 JMP SCK03
0048 05124 SELN1 EQU *
0049 05125 064000 LDB A B= INPUT CHAR,
0050 05126 160057 LDA XTYPE,I "CIRCLE D" RECEIVED?
0051 05127 030307 IOR DIBT
0052 05128 150057 CPA XTYPE,I
0053 05129 027134 JMP SCK01 YES.
0054 05130 170057 STA XTYPE,I NO. SET DIBT AND OUT.
0055 05131 027415 JMP SCK11
0056 05132 SCK01 EQU *
0057 05133 160057 LDA XTYPE,I A= ?TYPE

```

0058*
 0059*
 0060*
 0061*
 0062*
 0063*
 0064*

COME HERE WITH A=?TYPE & B=CHARACTER(PARITY BIT
 MASKED OFF!).
 POINTER TO ?TYPE MUST HAVE BEEN STORED IN"XTYPE".

```

0065 05135 057634      CPB UC          ="UC"?
0066 05136 027413      JMP SCK12       YES.
0067 05137 054211      CPB LC          NO. ="LC"?
0068 05140 027417      JMP SCK13       YES.
0069 05141 057650      CPB CIRCC       NO. ="CIRCLE C"?
0070 05142 027372      JMP SCK10       YES.
0071 05143              SCK03 EQU *
0072 05143 057643      CPB B55         NO. ="NL"?
0073 05144 027415      JMP SCK11       YES.
0074 05145 010313      AND XNB1T       NO. CLEAR XBIT.
0075 05146 170057      SIA XTYPE,I
0076 05147 002011      SLA,RSS         WHAT CODE?
0077 05150 027307      JMP SCK21       EBCD!
    
```

0079**CHECK OF INPUT FROM CALL1360 TERMINAL,*****

```

0080 05151 010160      AND UCBT        CALL/360.
0081 05152 002003      SZA,RSS         "US" BIT SET?
0082 05153 027162      JMP SCK02       NO.
0083 05154 160057      LQA XTYPE,I    YES.
0084 05155 057640      CPB CENT1       ="CENT"?
0085 05156 027324      JMP SCK71       YES.
0086 05157 057645      CPB UNDL1       NO. ="UNDERLINE"?
0087 05160 027350      JMP SCK91       YES.
0088 05161 027160      JMP INPTC       NO.
    
```

0090*

```

0091 05162              SCK02 EQU *
0092 05162 160057      LQA XTYPE,I
0093 05163 057640      CPB CCHR1       ="C"?
0094 05164 027344      JMP SCK81       YES.
    
```

0095*
 0096*
 0097*

0098* INPUT CONVERSION ENTRY.

0099*

0100* ENTER WITH A=?TYPE & B=CHARACTER.

0101** POINTER TO ?TYPE MUST HAVE BEEN STORED IN "XTYPE?"

0102*

```

0103 05165              INPTC EQU *
0104 05165 000010      SLA              WHICH CODE?
0105 05166 027171      JMP **J
0106 05167 144324      ADB CTB2,I      EBCD.
0107 05170 002001      RSS
0108 05171 047700      ADB CTBP1       CALL/360.
0109 05172 010160      AND UCBT
0110 05173 002002      SZA              "US" BIT SET?
0111 05174 044300      ADB BIT6        YES,LET B POINT TO UPPER PART.
0112 05175 160001      LQA B,I         A= CONVERTED CHAR.
0113 05176 001727      ALF,ALF         ROTATE INTO LOWER.
    
```

0114	05177	010214	AND B177	ISOLATE.
0115	05200	164057	LDB XTYPE, I	B=?TYPE
0116	05201	005323	RBR, RBR	"CENTC" BIT IN BIT0.
0117	05202	005323	RBR, RBR	
0118	05203	006011	SLB, RSS	CONTROL CHAR. BEING INPUT?
0119	05204	027235	JMP INPC3	NO.
0120	05205	070001	STA B	YES, SAVE CONVERTED CHAR.
0121	05206	040313	ADA NBT6	SUBTRACT 101B.
0122	05207	002021	SSA, RSS	BETWEEN A & Z?
0123	05210	027214	JMP INPC1	MAY BE.
0124	05211		INPC2 EQU *	
0125	05211	160057	LDA XTYPE, I	NO, A=?TYPE
0126	05212	013675	AND NCCC	CLEAR "CENT" & "CENTC" BIT.
0127	05213	027414	JMP SCK14	
0128	05214		INPC1 EQU *	
0129	05214	000001	LDA B	A=CONVERTED CHAR.
0130	05215	043673	ADA M133B	SUBTRACT 133B.
0131	05216	002021	SSA, RSS	BETWEEN A & Z?
0132	05217	027211	JMP INPC2	NO.
0133	05220	160057	LDA XTYPE, I	YES, A=?TYPE
0134	05221	013675	AND NCCC	CLEAR "CENT" & "CENTC" BIT.
0135	05222	170057	STA XTYPE, I	
0136	05223	060001	LDA B	A=CONVERTED CHAR.
0137	05224	053677	CPA XCUNT	="X"?
0138	05225	027230	JMP INPC6	YES.
0139	05226	010313	AND NBT6	NO, MAKE CONTROL CHAR.
0140	05227	127062	JMP ICNVR, I	RETURN TO MUX.
0141*				
0142	05230		INPC6 EQU *	
0143	05230	160057	LDA XTYPE, I	
0144	05231	030300	IUR XBIT	SET XBIT.
0145	05232	170057	STA XTYPE, I	
0146	05233	002400	CLA	A=0.
0147	05234	127062	JMP ICNVR, I	RETURN TO MUX.
0148	05235		INPC3 EQU *	
0149	05235	005200	RBL	"CENT" BIT IN BIT0.
0150	05236	006011	SLB, RSS	"CENT" + OTHER CHAR. BEING INPUT
0151	05237	127062	JMP ICNVR, I	NO, RETURN TO MUX.
0152*				
0153	05240	006400	CLB	YES, B=0.
0154	05241	053640	CPA B47	="SINGLE QUOTE"?
0155	05242	067667	LDB B140	YES, B="ACCENT GRAVE"
0156	05243	053641	CPA B50	NO, ="("?
0157	05244	067664	LDB B133	YES, B="LEFT BRACKET"
0158	05245	053642	CPA B51	NO, ="")"?
0159	05246	067666	LDB B135	YES, B="RIGHT BRACKET"
0160	05247	053644	CPA B57	NO, ="/"?
0161	05250	067665	LDB B134	YES, B="REV. SLASH"
0162	05251	053653	CPA B104	NO, ="D"?
0163	05252	064214	LDB B177	YES, B="DELETE"
0164	05253	053654	CPA B105	NO, ="E"?
0165	05254	067633	LDB B33	YES, B="ESCAPE"
0166	05255	053657	CPA B117	NO, ="O"?
0167	05256	067670	LDB B173	YES, B="LEFT BRACE"
0168	05257	053661	CPA B123	NO, ="S"?
0169	05260	067671	LDB B175	YES, B="RIGHT BRACE"

```

0170 05201 053002 CPA B124 NO. ="T"?
0171 05202 067672 LDB B176 YES. B="TILDE"
0172 05203 053655 CPA B106 NO. ="F"?
0173 05264 067634 LDB UC YES. B="FS".
0174 05265 053656 CPA B107 NO. ="G"?
0175 05266 067635 LDB B35 YES. B="GS".
0176 05267 053660 CPA B122 NO. ="R"?
0177 05270 067636 LDB B36 YES. B="RS".
0178 05271 053663 CPA B125 NO. ="U"?
0179 05272 064211 LDB B37 YES. B="US".
0180 05273 053652 CPA B101 NO. ="A"?
0181 05274 027302 JMP INPC5 YES.
0182 05275 INPC4 EQU *
0183 05275 160057 LDA XTYPE,I NO. CLEAR "CENT" BIT.
0184 05276 010143 AND NB13
0185 05277 170057 STA XTYPE,I
0186 05300 060001 LDA B A=CHAR. OR =0.
0187 05301 127062 JMP ICNVR,I RETURN TO MUX.
0188*
0189 05302 INPC5 EQU *
0190 05302 160057 LDA XTYPE,I A= ?TYPE
0191 05303 000010 SLA WHAT CODE?
0192 05304 027275 JMP INPC4 CALL/360.
0193 05305 067736 LDB B136 EBCD. B="CARET"
0194 05306 027275 JMP INPC4
0195*
0196*
0197*
0198*
0199*****
0200**CHECK OF INPUT FROM EBCD TERMINAL.*****
0201*
0202 05307 SCK21 EQU *
0203 05307 010160 AND UCBT
0204 05310 002002 SZA "US" BIT SET?
0205 05311 027314 JMP ++3 NO.
0206 05312 160057 LDA XTYPE,I YES.
0207 05313 027165 JMP INPTC ="CENT"?
0208 05314 160057 LDA XTYPE,I YES.
0209 05315 054150 CPB CENT2 NO. ="C"?
0210 05316 027324 JMP SCK71 YES.
0211 05317 057645 CPB CCHR2 NO. ="C"?
0212 05320 027344 JMP SCK81 YES.
0213 05321 054155 CPB UNDL2 NO. ="UNDERLINE"?
0214 05322 027350 JMP SCK91 YES.
0215 05323 027165 JMP INPTC NO.
0216*****
0217 05324 SCK71 EQU *
0218 05324 010164 AND CNBT
0219 05325 002002 SZA "CENT" BIT SET?
0220 05326 027332 JMP SCK72 YES.
0221 05327 160057 LDA XTYPE,I NO. SET "CENT" BIT.
0222 05330 030164 IOR CNBT
0223 05331 027414 JMP SCK14 RETURN TO MUX.
0224*
0225 05332 SCK72 EQU *

```

0226	05332	160057	LDA XIYPE,I	
0227	05333	010174	AND CCBT	
0228	05334	002002	SZA	"CENTC" BIT SET?
0229	05335	027341	JMP SCK73	YES,
0230	05336	160057	LDA XTYPE,I	NO,
0231	05337		SCK74 EQU *	
0232	05337	010143	AND CNNBT	CLEAR "CENT" BIT.
0233	05340	027414	JMP SCK14	RETURN TO MUX.
0234*				
0235	05341		SCK73 EQU *	
0236	05341	160057	LDA XTYPE,I	CLEAR "CENT" & "CENTC" BIT.
0237	05342	013675	AND NCCC	
0238	05343	027414	JMP SCK14	RETURN TO MUX.
0239*				
0240*				
0241	05344		SCK81 EQU *	
0242	05344	010174	AND CCBT	
0243	05345	002002	SZA	"CENTC" BIT SET?
0244	05346	027367	JMP SCK32	YES,
0245	05347	160057	LDA XTYPE,I	NO. IS "CENT" BIT SET?
0246	05350	010164	AND CNBT	
0247	05351	002003	SZA,RSS	
0248	05352	027367	JMP SCK32	NO,
0249	05353	160057	LDA XTYPE,I	YES, SET "CENTC" BIT.
0250	05354	030174	IOR CCBT	
0251	05355	027414	JMP SCK14	RETURN TO MUX.
0252*				
0253	05356		SCK91 EQU *	
0254	05356	010174	AND CCBT	
0255	05357	002002	SZA	"CENTC" BIT SET?
0256	05360	027341	JMP SCK73	YES,
0257	05361	160057	LDA XTYPE,I	NO,
0258	05362	010164	AND CNBT	
0259	05363	002003	SZA,RSS	"CENT" BIT SET?
0260	05364	027367	JMP SCK32	NO,
0261	05365	160057	LDA XTYPE,I	YES,
0262	05366	027337	JMP SCK74	
0263*				
0264*				
0265*				
0266	05367		SCK32 EQU *	
0267	05367	160057	LDA XTYPE,I	A = ?TYPE
0268	05370	064070	LDB XCHAR	B=INPUT CHAR.
0269	05371	027165	JMP INPTC	GO TO CONVERSION.
0270*				
0271*				
0272*				
0273*	ENTRIES FOR RETURN TO MUX.			
0274*				
0275	05372		SCK10 EQU *	
0276	05372	013674	AND UCDC	CLEAR US,CENT,CENTC & DIBT
0277	05373	070001	SIA H	SAVE ?TYPE
0278	05374	010300	AND XBIT	
0279	05375	002002	SZA	XBIT SET?
0280	05376	027402	JMP SCK15	YES,
0281	05377	174057	STB XTYPE,I	NO. RESTORE ?TYPE

0282	05400	060171	LDA	.,+13	A=CR,
0283	05401	127062	JMP	ICNVR,I	RETURN TO MUX.
0284*					
0285	05402		SCK15	EQU *	
0286	05402	060001	LDA	B	AV?TYPE
0287	05403	010313	AND	XNBIT	CLEAR XBIT.
0288	05404	030302	IOR	BITB	SET CIRCLE D BIT.
0289	05405	170057	STA	XTYPE,I	
0290	05406	160055	LDA	XSTAT,I	
0291	05407	030311	IOR	ICBT	SET "INPUT CONFIGURATION" BIT.
0292	05410	170055	STA	XSTAT,I	
0293	05411	060204	LDA	CANCL	A="CONTROL X"
0294	05412	127062	JMP	ICNVR,I	RETURN TO MUX.
0295*					
0296	05413		SCK12	EQU *	
0297	05413	030100	IOR	UCBT	SET "US" BIT.
0298	05414		SCK14	EQU *	
0299	05414	170057	STA	XTYPE,I	RESTORE ?TYPE.
0300	05415		SCK11	EQU *	
0301	05415	002400	CLA		A=0
0302	05416	127062	JMP	ICNVR,I	RETURN TO MUX.
0303*					
0304*					
0305	05417		SCK13	EQU *	
0306	05417	010147	AND	UCNBT	CLEAR "US" BIT.
0307	05420	027414	JMP	SCK14	

0309*

0310* ENTER WITH B= ?TYPE

0311* ?TYPE POINTER MUST HAVE BEEN STORED IN

0312* "XTYPE" AND OUTPUT CHAR. IN "XCHAR" PRIOR

0313* TO ENTRY.

0314*

0315	05421	000000	OGNVR	NUP	
0316	05422	060001		LDA B	A= ?TYPE
0317	05423	010221		AND TRINT	DO "TRANSMIT INTERRUPT"?
0318	05424	002003		SZA, RSS	
0319	05425	027462		JMP SEL10	
0320	05426	060001		LDA B	SET UP NEXT TRANSMIT
0321	05427	010321		AND NBT12	INTERRUPT CHARACTER.
0322	05430	050001		CPA B	
0323	05431	002001		RSS	
0324	05432	027455		JMP SEL21	SPACE
0325	05433	010320		AND NBT11	
0326	05434	050001		CPA B	
0327	05435	002001		RSS	
0328	05436	027455		JMP SEL21	SPACE
0329	05437	010317		AND NBT10	
0330	05440	050001		CPA B	
0331	05441	002001		RSS	
0332	05442	027455		JMP SEL21	SPACE
0333	05443	010316		AND NBT9	
0334	05444	050001		CPA B	
0335	05445	027451		JMP SEL20	
0336	05446	170057		STA XTYPE, I	
0337	05447	063676		LDA SYNCR	
0338	05450	027457		JMP SEL22	SYNC
0339	05451		SEL20	EQU *	
0340	05451	010315		AND NBT8	
0341	05452	170057		STA XTYPE, I	
0342	05453	060224		LDA CRCLD	
0343	05454	027457		JMP SEL22	CIRCLE D
0344*					
0345	05455		SEL21	EQU *	
0346	05455	170057		STA XTYPE, I	
0347	05456	000310		LDA SPACE	
0348	05457		SEL22	EQU *	
0349	05457	104045		LDB XTNUM, I	OUTPUT
0350	05460	115652		JSB IMUXR, I	CHARACTER
0351	05451	124340		JMP PMPXP, I	
0352*					
0353*					
0354	05462		SEL10	EQU *	
0355	05462	060001		LDA B	A= ?TYPE
0356	05463	064070		LDB XCHAR	B= OUTPUT CHAR.
0357	05464	057664		CPB B133	="LEFT BRACKET"?
0358	05465	027550		JMP SEL03	YES,
0359	05466	057666		CPB B135	NO. ="RIGHT BRACKET"?
0360	05467	027550		JMP SEL03	YES,
0361	05470	057665		CPB B134	NO. ="REVERSE SLASH"?
0362	05471	027550		JMP SEL03	YES,
0363	05472	057670		CPB B173	NO. ="LEFT BRACE"?
0364	05473	027550		JMP SEL03	YES,

0365	05474	057671	CPB B175	NO, ="RIGHT BRACE"?
0366	05475	027550	JMP SEL03	YES.
0367	05476	057607	CPB B140	NO, ="GRAVE ACCENT"?
0368	05477	027550	JMP SEL03	YES.
0369	05500	057672	CPB B176	NO, ="TILDE"?
0370	05501	027550	JMP SEL03	YES.
0371	05502	054171	CPB .+15B	NO, ="CR"?
0372	05503	027600	JMP SEL04	YES.
0373	05504	054160	CPB .+12B	NO, ="LF"?
0374	05505	027607	JMP SEL05	YES.
0375	05506	000010	SLA	NO, WHICH CODE?
0376	05507	027512	JMP SEL07	CALL/360,
0377	05510	057730	CPB B130	EBCD, ="CARET"?
0378	05511	027550	JMP SEL03	YES.
0379	05512		SEL07 EQU *	
0380	05512	100057	LDA XTYPE, I	A= ?TYPE
0381	05513	017620	JSB SLCNV	CONVERT.
0382	05514	005727	BLF, BLF	BIT#7 INTO BIT#15,
0383	05515	010160	AND UCBT	
0384	05510	006021	SSB, RSS	LOWER OR UPPER CASE CHAR.?
0385	05517	027534	JMP SEL09	LOWER CASE CHAR.?
0386	05520	002003	SZA, RSS	UPPER CASE CHAR. MODE?
0387	05521	027543	JMP SEL11	LOWER CASE MODE?
0388	*****			
0389*			UPPER CASE CHAR. & UPPER CASE MODE	
0390*				
0391*			OR	
0392*				
0393*			LOWER CASE CHAR. & LOWER CASE MODE	
0394*				
0395	05522		SEL08 EQU *	
0396	05522	005727	BLF, BLF	RESTORE B.
0397	05523	100057	LDA XTYPE, I	CLEAR "CENT" & "CENTC" BIT
0398	05524	013675	AND NCCC	
0399	05525	170057	STA XTYPE, I	
0400	05526	060001	LDA B	A=CONVERTED CHAR.
0401	05527	006400	CLB	ONE CHARACTER
0402	05530	002001	RSS	
0403	05531		SEL12 EQU *	
0404	05531	006404	CLB, INB	MULTI-CHARACTER
0405	05532	030301	IOR BIT7	SET STOP BIT
0406	05533	127421	JMP UCNVR, I	RETURN TO MULTIPLEXER LOGIC
0407*				
0408	*****			
0409*				
0410	05534		SEL09 EQU *	
0411	05534	002003	SZA, RSS	LOWER CASE CHAR. MODE?
0412	05535	027522	JMP SEL08	LOWER CASE MODE?
0413*				
0414	***** LOWER CASE CHAR. & UPPER CASE MODE.			
0415*				
0416	05536	100057	LDA XTYPE, I	CLEAR "US" BIT.
0417	05537	010147	AND UCNB1	
0418	05540	170057	STA XTYPE, I	
0419	05541	060211	LDA LC	A="LC".
0420	05542	027531	JMP SEL12	

0421*

0422*****UPPER CASE CHAR, & LOWER CASE MODE,

0423*

```

0424 05543      SEL11 EQU *
0425 05543 160057    LDA XTYPE,1    SET "US" BIT.
0426 05544 030160    IOR UCBT
0427 05545 170057    STA XTYPE,1
0428 05546 063634    LDA UC      A="UC".
0429 05547 027531    JMP SEL12
    
```

0430*

0431*****

0432*

0433*

TWO CHARACTER SEQUENCE PROC.

0434*

```

0435 05550      SEL03 EQU *
0436 05550 010174    AND CCBT
0437 05551 002002    SZA      "CENTC" BIT SET?
0438 05552 027512    JMP SEL07    YES, OUTPUT CHAR.
0439 05553 160057    LDA XTYPE,1    NO, "CENT" BIT SET?
0440 05554 010164    AND CNBT
0441 05555 002002    SZA
0442 05556 027574    JMP SEL02    YES.
0443 05557 160057    LDA XTYPE,1    NO, "US" BIT SET?
0444 05558 010160    AND UCBT
0445 05561 002002    SZA
0446 05562 027564    JMP SEL01    YES.
0447 05563 027543    JMP SEL11    NO, "UC" CODE FOR "CENT" CHAR,
0448*      NOT SENT YET! SET "US" BIT AND
0449*      SEND "UC".
    
```

0450*

0451*

```

0452 05564      SEL01 EQU *
0453 05564 160057    LDA XTYPE,1    SET "CENT" BIT.
0454 05565 030164    IOR CNBT
0455 05566 170057    STA XTYPE,1
0456 05567 064000    LDB A      B= ?TYPE
0457 05570 000156    LDA CENT2    RETURN
0458 05571 004010    SLB      TO
0459 05572 063647    LDA CENT3    MUX.
0460 05573 027531    JMP SEL12    WITH PROPER "CENT" CHAR.
    
```

0461*

0462*

```

0463 05574      SEL02 EQU *
0464 05574 160057    LDA XTYPE,1    SET "CENTC" BIT.
0465 05575 030174    IOR CCBT
0466 05576 170057    STA XTYPE,1    OUTPUT EITHER CHAR, OR "UC" OR
0467 05577 027512    JMP SEL07    "LC" CODE.
    
```

0468*

0469*

0470*****CR PROCESSING*****

0471*

```

0472 05600      SEL04 EQU *
0473 05600 010277    AND CRBT
0474 05601 002002    SZA      "CR" BIT SET?
0475 05602 027512    JMP SEL07    YES, OUTPUT "CR".
0476 05603 160057    LDA XTYPE,1    NO, SET "CR" BIT.
    
```

```

0477 05604 030277      IOR CRBT
0478 05605 170057      STA XTYPE,I      OUTPUT EITHER "CR" OR "UC"
0479 05606 027512      JMP SEL07        OR "LC" CODE.
0480*
0481*****
0482*
0483*
0484*****LF PROCESSING*****
0485*
0486 05607      SEL05 EQU *
0487 05607 010277      AND CRBT
0488 05610 002003      SZA,RSS          "CR" BIT SET?
0489 05611 027512      JMP SEL07        NO, OUTPUT "LF".
0490*
0491 05612 160057      LDA XTYPE,I      YES, CLEAR "CR" BIT.
0492 05613 010312      AND CRNBT
0493 05614 170057      STA XTYPE,I
0494 05615 000400      CLB              OUTPUT "NULL" INSTEAD.
0495 05616 074070      STB XCHAR
0496 05617 027512      JMP SEL07
0497*
0498*
0499*
0500*
0501*
0502*****
0503*
0504*
0505*
0506*
0507*      SUBROUTINE TO CONVERT AN OUTPUT CHAR.
0508*      ENTER WITH B=OUTPUT CHAR, AND A= ?TYPE.
0509*      ON EXIT B=CONVERTED CHAR.
0510*
0511 05620 000000      SLCNV NOP
0512 05621 000010      SLA              WHICH CODE?
0513 05622 027625      JMP **+3
0514 05623 144324      ADB CIB2,I      EBCD.
0515 05624 002001      RSS
0516 05625 047700      ADB CTBP1       CALL/360.
0517 05626 160001      LDA B,I         A=CONVERTED CHAR.
0518 05627 010210      AND B377
0519 05630 004000      LDB A           B=CONVERTED CHAR.
0520 05631 160057      LDA XTYPE,I    A= ?TYPE
0521 05632 127620      JMP SLCNV,I    RETURN.
0522*
0523*
0524 05633      ICVRE EQU *

```

0526*
 0527*
 0528*
 0529*
 0530*

CONSTANTS & STORAGE FOR SELECTRIC CONVERSION.

0531	00155		UNDL2	EQU	+.1	"UNDERLINE" IN EBCD(UPPER)
0532	00156		CENT2	EQU	+.2	"CENT" IN EBCD(UPPER)
0533	05633	000033	B33	OCT	33	
0534	05634	000034	UC	OCT	34	"UPPER CASE" IN BOTH CODES.
0535	00211		LC	EQU	B37	"LOWER CASE" IN BOTH CODES.
0536	05635	000035	B35	OCT	35	
0537	05636	000036	B36	OCT	36	
0538	05637	000046	B46	OCT	46	
0539	05640	000047	B47	OCT	47	
0540	05641	000050	B50	OCT	50	
0541	05642	000051	B51	OCT	51	
0542	05643	000055	B55	OCT	55	"NL" IN BOTH CODES.
0543	05644	000057	B57	OCT	57	
0544	05645	000063	UNDL1	OCT	63	"UNDERLINE" IN CALL/360(UPPER)
0545	05645		CCHR2	EQU	UNDL1	"C" IN EBCD(UPPER)
0546	05646	000072	CENT1	OCT	72	"CENT" IN CALL/360(UPPER)
0547	05640		CCHR1	EQU	CENT1	"C" IN CALL/360(LOWER)
0548	05647	000172	CENT3	OCT	172	"CENT" IN CALL/360(OUTPUT)
0549	05650	000074	CIRCC	OCT	74	"CIRCLE C" IN BOTH CODES.
0550	05651	000077	B77	OCT	77	
0551	05652	000101	B101	OCT	101	
0552	05653	000104	B104	OCT	104	
0553	05654	000105	B105	OCT	105	
0554	05655	000106	B106	OCT	106	
0555	05656	000107	B107	OCT	107	
0556	05657	000117	B117	OCT	117	
0557	05660	000122	B122	OCT	122	
0558	05661	000123	B123	OCT	123	
0559	05662	000124	B124	OCT	124	
0560	05663	000125	B125	OCT	125	
0561	05664	000133	B133	OCT	133	
0562	05665	000134	B134	OCT	134	
0563	05666	000135	B135	OCT	135	
0564	05667	000140	B140	OCT	140	
0565	05670	000173	B173	OCT	173	
0566	05671	000175	B175	OCT	175	
0567	05672	000176	B176	OCT	176	
0568	05673	177645	M133B	OCT	177645	
0569	05674	157743	UCDCC	OCT	157743	CLEAR US,CENT,CENTC & DIBT
0570	05675	177747	NCCC	OCT	177747	TO CLEAR "CENT" & "CENTC" BIT,
0571	00310		SPACE	EQU	BIT14	
0572	05676	077777	SYNCR	OCT	77777	
0573	05677	000130	XCONT	OCT	130	

0575*****

0576**CALL/360 CONVERSION TABLE*****

0577*

0578* INPUT=HIGH PART.

0579* OUTPUT=LOW PART.

0580*

0581	05700	005701	CIBP1	DEF	++1	
0582	05701	020075		OCT	020075	000
0583	05702	030475		OCT	030475	001
0584	05703	052075		OCT	052075	002
0585	05704	045075		OCT	045075	003
0586	05705	032174		OCT	032174	004
0587	05706	047475		OCT	047475	005
0588	05707	046075		OCT	046075	006
0589	05710	000075		OCT	000075	007
0590	05711	032535		OCT	032535	010
0591	05712	024457		OCT	024457	011
0592	05713	042556		OCT	042556	012
0593	05714	050075		OCT	050075	013
0594	05715	000075		OCT	000075	014
0595	05716	000155		OCT	000155	015
0596	05717	000075		OCT	000075	016
0597	05720	000075		OCT	000075	017
0598	05721	031075		OCT	031075	020
0599	05722	027075		OCT	027075	021
0600	05723	047114		OCT	047114	022
0601	05724	025054		OCT	025054	023
0602	05725	055117		OCT	055117	024
0603	05726	000075		OCT	000075	025
0604	05727	000075		OCT	000075	026
0605	05730	000136	B136	OCT	000136	027
0606	05731	033035		OCT	033035	030
0607	05732	044475		OCT	044475	031
0608	05733	045475		OCT	045475	032
0609	05734	050475		OCT	050475	033
0610	05735	000075		OCT	000075	034
0611	05736	004075		OCT	004075	035
0612	05737	000075		OCT	000075	036
0613	05740	000075		OCT	000075	037
0614	05741	030500		OCT	030500	040
0615	05742	046742		OCT	046742	041
0616	05743	054220		OCT	054220	042
0617	05744	043645		OCT	043645	043
0618	05745	030252		OCT	030252	044
0619	05746	051724		OCT	051724	045
0620	05747	044344		OCT	044344	046
0621	05750	054640		OCT	054640	047
0622	05751	033553		OCT	033553	050
0623	05752	051111		OCT	051111	051
0624	05753	042023		OCT	042023	052
0625	05754	024067		OCT	024067	053
0626	05755	000073		OCT	000073	054
0627	05756	000267		OCT	000267	055
0628	05757	000121		OCT	000121	056
0629	05760	004623		OCT	004623	057
0630	05761	031544		OCT	031544	060

PAGE 0075 #05 SELECTRIC CONVERSION TABLES

0631	05762	053040	OCT	053040	061
0632	05763	052420	OCT	052420	062
0633	05764	043160	OCT	043160	063
0634	05765	034404	OCT	034404	064
0635	05766	053410	OCT	053410	065
0636	05767	041130	OCT	041130	066
0637	05770	025550	OCT	025550	067
0638	05771	034070	OCT	034070	070
0639	05772	040464	OCT	040464	071
0640	05773	041721	OCT	041721	072
0641	05774	020273	OCT	020273	073
0642	05775	000360	OCT	000360	074
0643	05776	000001	OCT	000001	075
0644	05777	000350	OCT	000350	076
0645	000000	000261	OCT	000261	077
0646	06001	020371	OCT	020371	100
0647	06002	036571	OCT	036571	101
0648	06003	052160	OCT	052160	102
0649	06004	000172	OCT	000172	103
0650	06005	000052	OCT	000052	104
0651	06006	047512	OCT	047512	105
0652	06007	046163	OCT	046163	106
0653	06010	000043	OCT	000043	107
0654	06011	000046	OCT	000046	110
0655	06012	024431	OCT	024431	111
0656	06013	042503	OCT	042503	112
0657	06014	057032	OCT	057032	113
0658	06015	000106	OCT	000106	114
0659	06016	000141	OCT	000141	115
0660	06017	000122	OCT	000122	116
0661	06020	000105	OCT	000105	117
0662	06021	021013	OCT	021013	120
0663	06022	035133	OCT	035133	121
0664	06023	047051	OCT	047051	122
0665	06024	027445	OCT	027445	123
0666	06025	022402	OCT	022402	124
0667	06026	000062	OCT	000062	125
0668	06027	000001	OCT	000001	126
0669	06030	000165	OCT	000165	127
0670	06031	000142	OCT	000142	130
0671	06032	044547	OCT	044547	131
0672	06033	045524	OCT	045524	132
0673	06034	050553	OCT	050553	133
0674	06035	000223	OCT	000223	134
0675	06036	004111	OCT	004111	135
0676	06037	000213	OCT	000213	136
0677	06040	000363	OCT	000363	137
0678	06041	023640	OCT	023640	140
0679	06042	046571	OCT	046571	141
0680	06043	020566	OCT	020566	142
0681	06044	043572	OCT	043572	143
0682	06045	023052	OCT	023052	144
0683	06046	021512	OCT	021512	146
0684	06047	044163	OCT	044163	146
0685	06050	054443	OCT	054443	147
0686	06051	037040	OCT	037040	150

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0687	06052	051031	OCT	051031	151
0688	06053	022103	OCT	022103	152
0689	06054	034032	OCT	034032	153
0690	06055	000106	OCT	000106	154
0691	06056	000141	OCT	000141	155
0692	06057	000122	OCT	000122	156
0693	06060	004505	OCT	004505	157
0694	06061	036013	OCT	036013	160
0695	06062	037533	OCT	037533	161
0696	06063	052451	OCT	052451	162
0697	06064	057445	OCT	057445	163
0698	06065	070002	OCT	070002	164
0699	06066	053462	OCT	053462	165
0700	06067	041061	OCT	041061	166
0701	06070	026565	OCT	026565	167
0702	06071	000142	OCT	000142	170
0703	06072	040147	OCT	040147	171
0704	06073	000124	OCT	000124	172
0705	06074	035505	OCT	035505	173
0706	06075	000264	OCT	000264	174
0707	06076	000045	OCT	000045	175
0708	06077	000002	OCT	000002	176
0709	06100	000177	OCT	000177	177

0710*

0711*****

0712*****

0713**LEBCD CONVERSION TABLE*****

0714*

0715* INPUT=HIGH PART.

0716* OUTPUT=LOW PART.

0717*

0718	06101	006102	C1BP2	DEF	++1	
0719	06102	020075	OCT	020075		000
0720	06103	026475	OCT	026475		001
0721	06104	040075	OCT	040075		002
0722	06105	023075	OCT	023075		003
0723	06106	034174	OCT	034174		004
0724	06107	070475	OCT	070475		005
0725	06110	074475	OCT	074475		006
0726	06111	064075	OCT	064075		007
0727	06112	032135	OCT	032135		010
0728	06113	066457	OCT	066457		011
0729	06114	072556	OCT	072556		012
0730	06115	062075	OCT	062075		013
0731	06116	000075	OCT	000075		014
0732	06117	000155	OCT	000155		015
0733	06120	000075	OCT	000075		016
0734	06121	000075	OCT	000075		017
0735	06122	031075	OCT	031075		020
0736	06123	065475	OCT	065475		021
0737	06124	071514	OCT	071514		022
0738	06125	061054	OCT	061054		023
0739	06126	030117	OCT	030117		024
0740	06127	000075	OCT	000075		025
0741	06130	000075	OCT	000075		026
0742	06131	000136	OCT	000136		027

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0743	06132	033075	OCT	033075	030
0744	06133	067475	OCT	067475	031
0745	06134	073475	OCT	073475	032
0746	06135	063075	OCT	063075	033
0747	06136	000075	OCT	000075	034
0748	06137	004075	OCT	004075	035
0749	06140	000075	OCT	000075	036
0750	06141	000075	OCT	000075	037
0751	06142	030500	OCT	030500	040
0752	06143	065365	OCT	065365	041
0753	06144	027664	OCT	027664	042
0754	06145	060464	OCT	060464	043
0755	06146	034565	OCT	034565	044
0756	06147	071350	OCT	071350	045
0757	06150	075103	OCT	075103	046
0758	06151	064730	OCT	064730	047
0759	06152	032744	OCT	032744	050
0760	06153	067324	OCT	067324	051
0761	06154	073304	OCT	073304	052
0762	06155	062703	OCT	062703	053
0763	06156	000166	OCT	000166	054
0764	06157	000001	OCT	000001	055
0765	06160	000067	OCT	000067	056
0766	06161	004542	OCT	004542	057
0767	06162	031524	OCT	031524	060
0768	06163	066040	OCT	066040	061
0769	06164	072020	OCT	072020	062
0770	06165	061560	OCT	061560	063
0771	06166	021410	OCT	021410	064
0772	06167	022150	OCT	022150	065
0773	06170	026130	OCT	026130	066
0774	06171	027070	OCT	027070	067
0775	06172	033404	OCT	033404	070
0776	06173	070144	OCT	070144	071
0777	06174	074210	OCT	074210	072
0778	06175	063760	OCT	063760	073
0779	06176	000220	OCT	000220	074
0780	06177	000240	OCT	000240	075
0781	06200	000270	OCT	000270	076
0782	06201	000342	OCT	000342	077
0783	06202	020002	OCT	020002	100
0784	06203	057643	OCT	057643	101
0785	06204	000223	OCT	000223	102
0786	06205	025763	OCT	025763	103
0787	06206	025213	OCT	025213	104
0788	06207	050753	OCT	050753	105
0789	06210	054733	OCT	054733	106
0790	06211	044273	OCT	044273	107
0791	06212	035207	OCT	035207	110
0792	06213	046747	OCT	046747	111
0793	06214	052741	OCT	052741	112
0794	06215	042321	OCT	042321	113
0795	06216	000261	OCT	000261	114
0796	06217	000311	OCT	000311	115
0797	06220	000251	OCT	000251	116
0798	06221	000231	OCT	000231	117

0799	06222	036371	OCT	036371	120
0800	06223	045705	OCT	045705	121
0801	06224	051645	OCT	051645	122
0802	06225	041322	OCT	041322	123
0803	06226	024662	OCT	024662	124
0804	06227	000312	OCT	000312	125
0805	06228	000252	OCT	000252	126
0806	06231	000232	OCT	000232	127
0807	06232	023772	OCT	023772	130
0808	06233	047706	OCT	047706	131
0809	06234	053646	OCT	053646	132
0810	06235	043344	OCT	043344	133
0811	06236	000142	OCT	000142	134
0812	06237	004324	OCT	004324	135
0813	06240	000243	OCT	000243	136
0814	06241	000101	OCT	000101	137
0815	06242	036566	OCT	036566	140
0816	06243	045043	OCT	045043	141
0817	06244	037423	OCT	037423	142
0818	06245	040563	OCT	040563	143
0819	06246	024013	OCT	024013	144
0820	06247	051153	OCT	051153	145
0821	06250	055133	OCT	055133	146
0822	06251	044473	OCT	044473	147
0823	06252	022407	OCT	022407	150
0824	06253	047147	OCT	047147	151
0825	06254	053141	OCT	053141	152
0826	06255	042521	OCT	042521	153
0827	06256	000001	OCT	000001	154
0828	06257	000111	OCT	000111	155
0829	06260	000051	OCT	000051	156
0830	06261	004431	OCT	004431	157
0831	06262	035571	OCT	035571	160
0832	06263	046105	OCT	046105	161
0833	06264	052045	OCT	052045	162
0834	06265	041522	OCT	041522	163
0835	06266	021062	OCT	021062	164
0836	06267	020512	OCT	020512	165
0837	06270	076052	OCT	076052	166
0838	06271	000032	OCT	000032	167
0839	06272	037172	OCT	037172	170
0840	06273	050106	OCT	050106	171
0841	06274	054046	OCT	054046	172
0842	06275	043631	OCT	043631	173
0843	06276	000366	OCT	000366	174
0844	06277	000322	OCT	000322	175
0845	06300	000262	OCT	000262	176
0846	06301	000213	OCT	000213	177

0847*

0848*****

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0002*
0003 00302 000000 TBGEN NOP
0004 00303 070270 STA TBGA SAVE
0005 00304 074271 STB TBGB
0006 00305 001500 ERA
0007 00306 070272 STA TBGE REGISTERS,
0008 00307 064252 LDB NPORT GET NR. OF PORTS.
0009 00310 007000 CMB MAKE -(NPORT+1).
0010 00311 074273 STB TBGCN SAVE.
0011 00312 064345 LDB TTY B=> ?INUM OF TTY00
0012 00313 TBG1 EQU *
0013 00313 074276 STB TTYN
0014 00314 044164 ADB .+?STAT
0015 00315 074275 STB TPUNT SAVE IT.
0016 00316 160001 LDA B,I A= ?STAT
0017 00317 010220 AND PLDHE
0018 00320 002003 SZA,RSS SOMETHING GOING ON?
0019 00321 026474 JMP TBG6 NO.
0020 00322 160001 LDA B,I YES, A= ?STAT
0021 00323 010302 AND PDBT
0022 00324 002002 SZA PDBT BIT SET?
0023 00325 026364 JMP TBG2 YES.
0024 00326 160001 LDA B,I NO, A= ?STAT
0025 00327 010300 AND ENBT
0026 00330 002002 SZA ENBT BIT SET?
0027 00331 026412 JMP TBG4 YES.
0028 00332 026337 JMP TBG3 NO.
0029 00333 TBG5 EQU *
0030 00333 160001 LDA B,I NO, A= ?STAT
0031 00334 010217 AND HLTLD
0032 00335 002003 SZA,RSS LTBT OR LDBT OR HUBT BIT SET?
0033 00336 026474 JMP TBG6 NO.
0034 00337 TBG3 EQU *
0035 00337 160001 LDA B,I YES, A= ?STAT
0036 00340 010304 AND HUBT
0037 00341 002002 SZA HUBT BIT SET?
0038 00342 026447 JMP TBG7 YES.
0039 00343 TBG14 EQU *
0040 00343 044157 ADB .+?PHON=?STAT NO, LTBT OR LDBT SET.
0041 00344 134001 ISZ B,I BUMP TIMING COUNTER.
0042 00345 026474 JMP TBG6 NOT = 0 YET
0043 00346 044151 ADB .+?STAT=?PHON B=> ?STAT
0044 00347 160001 LDA B,I A= ?STAT
0045 00350 010277 AND LTBT
0046 00351 002002 SZA LTBT BIT SET?
0047 00352 026462 JMP TBG15 YES, MUST BE LOG-ON TIMING OUT.
0048*
0049* NO. LDBT SET!
0050*
0051 00353 160270 LDA TTYN,I A = TTY#
0052 00354 031667 IOR UHU MERGE WITH OPCODE.
0053 00355 115651 JSB IOMTM,I TELL OTHER MACHINE.
0054 00356 064275 LDB TPUNT B=> ?STAT
0055 00357 000133 LDA LDNBT REMOVE LDBT
0056 00360 010334 AND NIEBT AND ENBT+ICBT BITS.
0057 00361 110001 AND B,I

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0058 06362 016526 JSB TBG11
0059 06363 020474 JMP TBG6
0060*
0061*
0062 06364 TBG2 EQU *
0063 06364 120001 XOR B,I REMOVE PDBT BIT.
0064 06365 170001 SIA B,I
0065 06366 044167 ADB .+?PPRM-?STAT B=> ?PPRM
0066 06367 160001 LDA B,I A= ?PPRM
0067 06370 001005 ELA,CLL,ERA STOP SCANNING.
0068 06371 016510 JSB TBG10
0069 06372 164270 LDB TIYN,I B= ?TNUM
0070 06373 005710 BLF,SLB 1ST OR 2ND BOARD?
0071 06374 026377 JMP ++3
0072 06375 102515 LIA DSCB1 1ST. GET STATUS.
0073 06376 002001 RSS
0074 06377 102520 LIA DSCB2 2ND. GET STATUS.
0075 06400 010157 AND .+3 ISOLATE STATUS BITS.
0076 06401 033044 IOR DIRON TURN ON "DTR" AND "RQS".
0077 06402 016510 JSB TBG10
0078 06403 064270 LDB TIYN
0079 06404 044175 ADB .+?RPRM
0080 06405 160001 LDA B,I A= ?RPRM
0081 06406 164270 LDB TIYN,I B= ?TNUM
0082 06407 115652 JSB IMUXR,I OUTPUT PARAMETER
0083 06410 102100 STF 0
0084 06411 026474 JMP TBG6
0085*
0086 06412 TBG4 EQU *
0087 06412 044145 ADB .+?CCNT-?STAT B=> ?CCNT
0088 06413 160001 LDA B,I
0089 06414 002003 SZA,RSS NR. OF OUTPUT CHARS.=0?
0090 06415 020420 JMP TBG12 YES.
0091 06416 TBG13 EQU *
0092 06416 064275 LDB TPONT NO. B=> ?STAT
0093 06417 020333 JMP TBG5
0094 06420 TBG12 EQU *
0095 06420 044100 ADB .+?TIMO-?CCNT B=> ?TIMO
0096 06421 134001 ISZ B,I UPDATE TIMING COUNTER.
0097 06422 020410 JMP TBG13 NOT #0 YET!
0098 06423 064275 LDB TPONT TIME IS UP
0099 06424 160001 LDB B,I REMOVE "ENTER
0100 06425 010313 AND ENNB1 TIMING" BIT AND
0101 06426 030303 IOR NIB1 SET "NO INPUT
0102 06427 170001 STA B,I ALLOWED" BIT
0103 06430 044160 ADB .+?TYPE-?STAT
0104 06431 160001 LDA B,I IF THE DUDE HAS
0105 06432 002003 SZA,RSS A SELECTRIC, SET
0106 06433 026430 JMP ++3 HIM UP FOR A
0107 06434 030221 IOR TRINT TRANSMIT INTERRUPT
0108 06435 170001 STA B,I
0109 06436 044101 ADB .+?RPRM-?TYPE
0110 06437 160001 LDA B,I TURN OFF THE
0111 06440 010321 AND NECHU USER'S ECHO
0112 06441 164270 LDB TIYN,I
0113 06442 115052 JSB IMUXR,I

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0114 06443 160270 LDA TTYN,1 TELL THE SYSTEM
0115 06444 031600 IOR ETO THAT ENTER HAS
0116 06445 115651 JSB IUMTM,1 TIMED OUT
0117 06446 026474 JMP TBG0
0118*
0119 06447 TBG7 EQU *
0120 06447 044145 ADB .+?CCNT-?STAT B=> ?CCNT
0121 06450 160001 LDA B,1 A= ?CCNT
0122 06451 002003 SZA,RSS NR. OF OUTPUT CHARS.=0?
0123 06452 026461 JMP TBG9 YES,
0124 06453 044163 ADB .+?STAT-?CCNT B=> ?STAT
0125 06454 160001 LDA B,1 A= ?STAT
0126 06455 010212 AND L|LDB
0127 06456 002002 SZA LTBT OR LDBT BIT SET?
0128 06457 026343 JMP TBG14 YES,
0129 06460 026474 JMP TBG6 NO.
0130*
0131 06461 TBG9 EQU *
0132 06461 044163 ADB .+?STAT-?CCNT B=> ?STAT
0133 06462 TBG15 EQU *
0134* REMOVE LTBT,LDBT AND HUBT BITS.
0135 06462 060217 LDA HLTLD
0136 06463 003000 CMA
0137 06464 110001 AND B,1
0138* SET PDBT BIT.
0139 06465 030302 IOR PDBT
0140 06466 016520 JSB TBG11
0141* HANG PHONE UP.
0142 06467 044157 ADB .+?PPRM-?SCNT B=> ?PPRM
0143 06470 160001 LDA B,1 A= ?PPRM
0144 06471 010157 AND .+3 ISOLATE STATUS BITS
0145 06472 033043 IOR DTR0F TURN OFF "DTR" AND "RQS".
0146 06473 016510 JSB TBG10
0147*
0148 06474 TBG6 EQU *
0149 06474 034273 ISZ TBGCN BUMP COUNTER.
0150 06475 002001 RSS
0151 06476 026502 JMP TBG16 DONE. GET OUT.
0152 06477 064276 LDB TTYN
0153 06500 044200 ADB .+TTY01-TTY00 NOT DONE YET.
0154 06501 026313 JMP TBG1 GO BACK.
0155*
0156* EXIT.
0157*
0158 06502 TBG16 EQU *
0159 06502 060272 LDA TBGE RESTORE
0160 06503 001600 ELA
0161 06504 060270 LDA TBGA
0162 06505 064271 LDB TBGB REGISTERS.
0163 06506 103112 CLF TBASE ENABLE NEXT INTERRUPT.
0164 06507 126302 JMP TBGEN,1 RETURN.
0165*
0166* ENTER WITH A=PARAM.
0167* EXIT WITH A= PARAM
0168*
0169 06510 000000 TBG10 NOP

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0170 00511 104270      LDB TTYN,I      B = TTY#
0171 00512 005705      BLF,CLE,ERB
0172 00513 005300      RBR
0173 00514 030001      IOR B           MERGE UNIT NR,
0174 00515 004275      LDB IPONT       B=> ?STAT
0175 00516 044167      ADB .+?PPRM-?STAT B=> ?PPRM
0176 00517 170001      STA B,I        STORE,
0177 00520 002040      SEZ            SKIP IF FIRST BOARD
0178 00521 026524      JMP ++J
0179 00522 102615      OIA DSCB1      1ST. OUTPUT PARAM.
0180 00523 002001      RSS
0181 00524 102620      OIA DSCB2      2ND. OUTPUT PARAM.
0182 00525 126510      JMP TBG10,I    RETURN,
0183*
0184*
0185* ENTER WITH NEW STATUS IN (A) AND
0186* B=> ?STAT
0187*
0188 00526 000000      TBG11 NUP
0189 00527 030164      IOR IOBT       SET IOBT BIT,
0190 00530 170001      STA B,I        SET NEW STATUS,
0191 00531 044160      ADB .+?TYPE-?STAT B=> ?TYPE
0192 00532 100001      LDA B,I        A = ?TYPE
0193 00533 002003      SZA,RSS       TYPE 0?
0194 00534 026537      JMP ++J        YES,
0195 00535 002404      CLA,INA       NO, RESET TO CALL/360.
0196 00536 170001      STA B,I
0197 00537 002400      CLA
0198 00540 044141      ADB .+?CCNT-?TYPE B=> ?CCNT
0199 00541 170001      STA B,I        SET ?CCNT=0
0200 00542 044172      ADB .+?DCNT-?CCNT
0201 00543 170001      STA B,I        SET ?DCNT=0
0202 00544 006004      INB
0203 00545 170001      STA B,I        SET ?SCNT=0
0204 00546 126520      JMP TBG11,1    RETURN,
0205 00547          TBGED EQU *

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0207*					
0208*					
0209	06547	INIF	EQU *	SYSTEM UPDATE ENTRY.	
0210	06547 060266		LDA RCODE	GET INPUT.	
0211	06550 001727		ALF,ALF		
0212	06551 010211		AND B37	EXTRACT (NR. OF PORTS=1).	
0213	06552 073040		STA NNPRT	SAVE IT.	
0214	06553 006400		CLB	CLEAR	
0215	06554 107700		CLC B,C	MUX	
0216	06555 034001		ISZ B	BOARDS.	
0217	06556 020554		JMP *-2		
0218	06557 050252		CPA NPURT	EQUAL TO ORIGINAL NR.?	
0219	06560 026574		JMP INIFC	YES.	
0220	06561 003004		CMA,INA	NO. NEGATE.	
0221	06562 040252		ADA NPURT		
0222	06563 002021		SSA,RSS	LESS THAN?	
0223	06564 026571		JMP INIF1	YES.	
0224	06565 000252		LDA NPURT	NO. GREATER THAN!	
0225	06566 002004		INA	INITIALIZE	
0226	06567 067040		LDB NNPRT	EXCESS	
0227	06570 017045		JSB ISUBA	OF PORTS.	
0228	06571	INIF1	EQU *		
0229	06571 063040		LDA NNPRT	DISABLE	
0230	06572 002004		INA	REST	
0231	06573 017100		JSB ISUBB	OF PORTS.	
0232*					
0233	06574	INIFC	EQU *		
0234	06574 060127		LDA M32		
0235	06575 070267		STA STEMP	SET COUNTER.	
0236	06576 064340		LDB TTCC	B=> ?CCNT OF TTY00.	
0237	06577	INIFD	EQU *		
0238	06577 002400		CLA		
0239	06600 170001		STA B,I	SE ?CCNT=0	
0240	06601 044161		ADB ,+?BGIN-?CCNT	B=> ?BGIN	
0241	06602 100001		LDA B,I	A= ?BGIN	
0242	06603 044150		ADB ,+?BPNT-?BGIN	B=> ?BPNT	
0243	06604 170001		STA B,I	SET ?BPNT=?BGIN	
0244	06605 006004		INB	B=> ?BSTR	
0245	06606 170001		STA B,I	SET ?BSTR=?BGIN	
0246	06607 006004		INB	B=> ?BHED	
0247	06610 170001		STA B,I	SET ?BHED=?BGIN	
0248	06611 044160		ADB ,+?STAT-?BHED	B=> ?STAT	
0249	06612 060164		LDA IOBT	SET STATUS TO INPUT	
0250	06613 170001		STA B,I		
0251	06614 002400		CLA		
0252	06615 044163		ADB ,+?DCNT-?STAT	B=> ?DCNT	
0253	06616 170001		STA B,I	SET ?DCNT=0	
0254	06617 006004		INB	B=> ?SCNT	
0255	06620 170001		STA B,I	SET ?SCNT=0	
0256	06621 044161		ADB ,+TTY01-TTY00+?CCNT-?SCNT	MOVE TO NEXT	
0257	06622 034267		ISZ STEMP	DONE?	
0258	06623 026577		JMP INIFD	NO.	
0259*					
0260*					
0261*					
0262*					

START UP LOWER TTYS.

0203	06624	063040	LDA NNPRT	
0264	06625	040134	ADA .-16	
0265	06626	067040	LDB NNPRT	
0206	06627	002021	SSA, RSS	MORE THAN 16 PORTS?
0207	06630	064173	LDB .+15	YES,
0200	06631	007000	CMB	NO.
0204	06632	074267	STB STEMF	SET COUNTER.
0270	06633	007616	LDB TTRP	B=> ?RPRM OF TTY00.
0271	06634		INFE1 EQU *	
0272	06634	102514	LIA MPX+1	CHECK SEEKING,
0273	06635	002020	SSA	
0274	06636	020034	JMP *-2	
0275	06637	100001	LDA B,1	A=> ?RPRM
0276	06640	006004	INB	B=> ?SPRM
0277	06641	077037	STB NTEMP	SAVE IT.
0278	06642	044132	ADB .+?TNUM-?SPRM	B=> ?TNUM
0279	06643	164001	LDB B,1	B= ?TNUM
0280	06644	005222	RBL, RBL	UNIT NR. IN BITS 10-14.
0281	06645	102613	OTA MPX	OUTPUT ?RPRM
0282	06646	106014	OTB MPX+1	
0283	06647	102713	STC MPX	
0284	06650	102514	LIA MPX+1	CHECK SEEKING,
0285	06651	002020	SSA	
0286	06652	026650	JMP *-2	
0287	06653	103037	LDA NTEMP,1	A= ?SPRM
0288	06654	102613	OTA MPX	OUTPUT ?SPRM
0289	06655	100014	OTB MPX+1	
0290	06656	102713	STC MPX	
0291	06657	067037	LDB NTEMP	B=> ?SPRM
0292	06660	044155	ADB .+?PPRM-?SPRM	B=> ?PPRM
0293	06661	160001	LDA B,1	A= ?PPRM
0294	06662	102615	OTA DSCB1	OUTPUT ?PPRM
0295	06663	044176	ADB .+TTY01-TTY00+?RPRM-?PPRM	MOVE TO NEXT,
0296	06664	034267	ISZ STEMF	DONE?
0297	06665	026634	JMP INFE1	NO. GO BACK.
0298	06666	063040	LDA NNPRT	
0299	06667	040134	ADA .-16	
0300	06670	002020	SSA	ONE OR TWO BOARDS?
0301	06671	026727	JMP INFE6	ONE,
0302*				TWO. START UP UPPER TIYS.
0303*				
0304	06672	003000	CMA	
0305	06673	070267	STA STEMF	SET COUNTER.
0306	06674		INFE3 EQU *	
0307	06674	102517	LIA MPY+1	CHECK SEEKING,
0308	06675	002020	SSA	
0309	06676	026674	JMP *-2	
0310	06677	160001	LDA B,1	A= ?RPRM
0311	06700	006004	INB	B=> ?SPRM
0312	06701	077037	STB NTEMP	SAVE IT.
0313	06702	044132	ADB .+?TNUM-?SPRM	B=> ?TNUM
0314	06703	164001	LDB B,1	B= ?TNUM
0315	06704	005765	BLF, CLE, ERB	MAKE TTY NR. 0-15.
0316	06705	005300	ROR	UNIT NR. IN BITS 10-14.
0317	06706	102616	OTA MPY	OUTPUT ?RPRM
0318	06707	106017	OTB MPY+1	

0319	06710	102710	STC	MPY	
0320	06711	102517	LIA	MPY+1	CHECK SEEKING.
0321	06712	002020	SSA		
0322	06713	020711	JMP	*-2	
0323	06714	163037	LDA	NTEMP,1	A= ?SPRM
0324	06715	102616	OTA	MPY	OUTPUT ?SPRM
0325	06710	106617	UIB	MPY+1	
0326	06717	102710	STC	MPY	
0327	06720	067037	LDB	NTEMP	B=> ?SPRM
0328	06721	044155	ADB	,+?PPRM-?SPRM	B=> ?PPRM
0329	06722	160001	LDA	B,1	A= ?PPRM
0330	06723	102620	OTA	DSCB2	OUTPUT ?PPRM
0331	06724	044176	ADB	,+TTY01-TTY00+?RPRM-?PPRM	MOVE TO NEXT.
0332	06725	034267	ISZ	STEMP	DONE?
0333	06726	026674	JMP	INFE3	NO. GO BACK.
0334*					
0335*					
0336	06727		INFE6	EQU *	
0337	06727	037615	ISZ	CKFLG	SET FLAG TO BE USED BY
0338	06730	063040	LDA	NNPRT	SET NEW NR. OF TTYS.
0339	06731	070252	STIA	NPORT	
0340	06732	060157	LDA	,+3	
0341	06733	102612	OTA	TBASE	
0342	06734	103712	STC	TBASE,C	INITIALIZE TBG.
0343	06735	103713	STC	MPX,C	INITIALIZE 1ST MUX BOARD.
0344	06736	103715	STC	DSCB1,C	INITIALIZE 1ST DSC BOARD.
0345	06737	060252	LDA	NPORT	
0346	06740	003004	CMA	INA	
0347	06741	040173	ADA	,+15	
0348	06742	002021	SSA	RSS	MORE THAN 16 PORTS?
0349	06743	026763	JMP	INI1	NO.
0350	06744	103716	STC	MPY,C	YES. INITIALIZE 2ND MUX BOARD.
0351	06745	103720	STC	DSCB2,C	INITIALIZE 2ND DSC BOARD.
0352	06746	026763	JMP	INI1	
0353*					
0354*					
0355*					
0356	06747		INI	EQU *	SYSTEM GENERATION ENTRY.
0357	06747	002400	CLA		RESET FLAG TO BE USED
0358	06750	073615	STIA	CKFLG	BY POWERFAIL ROUTINE.
0359	06751	006400	CLB		CLEAR
0360	06752	107700	CLC	0,C	MUX
0361	06753	034001	ISZ	B	BOARDS.
0362	06754	026752	JMP	*-2	
0363	06755	064211	LDB	B37	SET NR. OF TTYS.
0364	06756	074252	STB	NPORT	
0365	06757	002400	CLA		INITIALIZE ALL
0366	06760	017045	JSB	ISUBA	32 PORTS.
0367	06761	060126	LDA	M1200	SET PONES TIMING
0368	06762	070262	STIA	PHR	TO 120 SEC.
0369	06763		INI1	EQU *	
0370	06763	106711	CLC	C2	INITIALIZE
0371	06764	102111	STF	C2	SEND CHANNEL.
0372*					
0373	06765	103710	STC	C1,C	INITIALIZE RECEIVE CHANNEL.
0374*					

03/5 06766 103704

SIC 4,C

INITIALIZE POWER FAIL.

0377*

0378** IDLE LOOP

0379*

0380	06767	IDLE	EQU *	
0381	06767	102100	STF 0	
0382	06770	000000	NOP	
0383	06771	060111	LDA LPDIS	CHECK FOR
0384	06772	002002	SZA	LINE PRINTER
0385	06773	027026	JMP ILPD	DISCONNECTION
0386	06774	060106	LDA LFLAG	CHECK FOR
0387	06775	002002	SZA	LINE PRINTER
0388	06776	124332	JMP LPIN,I	INITIALIZATION
0389	06777	060110	LDA LPDRF	CHECK FOR LP
0390	07000	002002	SZA	DOWN MESSAGE
0391	07001	124331	JMP LDWR,I	RETURN
0392	07002	002300	CCE	
0393	07003	003400	CCA	
0394	07004	007400	CCB	
0395	07005	002041	SEZ,RSS	
0396	07006	102000	HLT	
0397	07007	003002	CMA,SZA	
0398	07010	102000	HLT	
0399	07011	007002	CMB,SZH	
0400	07012	102000	HLT	
0401	07013	000040	CLE	
0402	07014	002400	CLA	
0403	07015	006400	CLB	
0404	07016	002040	SEZ	
0405	07017	102000	HLT	
0406	07020	002002	SZA	
0407	07021	102000	HLT	
0408	07022	006002	SZB	
0409	07023	102000	HLT	
0410	07024	000000	NOP	
0411	07025	026767	JMP IDLE	

0413*

0414	07026	002400	ILPD	CLA	CLEAR
0415	07027	070103		STA LPTTY	LINE
0416	07030	070104		STA TLSUP	PRINTER
0417	07031	070105		STA TLPR	FLAGS AND
0418	07032	070106		STA LFLAG	INDICATORS
0419	07033	070107		STA LPERF	
0420	07034	070110		STA LPDRF	
0421	07035	070111		STA LPDIS	
0422	07036	026767		JMP IDLE	

0424*

0425** CONSTANTS

0426*

0427	07037	000000	NTEMP	BSS	1	
0428	07040	000000	NNPRT	BSS	1	
0429	07041	131202	RPINT	OCT	131202	INITIAL RECEIVE PARAM.
0430	07042	171202	SPINT	OCT	171202	INITIAL SEND PARAM.
0431	07043	140314	DTR0F	OCT	140314	DATA TERM. READY OFF.
0432	07044	140374	DTR0N	OCT	140374	DATA TERM. READY ON.

```

0434*
0435*
0436* ENIER WITH A= LOWEST PORT# AND B= HIGHEST PORT#.
0437* THIS SUBROUTINE WILL:
0438*     SET ?TYPE TO 0
0439*     SET ?CDLY TO -1
0440*     SET ?LDLY TO 0
0441*
0442*     SET BAUD RATE TO 110
0443*     SET CHAR, SIZE TO 2           -?RPRM
0444*     SET ECHO BIT
0445*     SET ENABLE BIT
0446*
0447*     SET BAUD RATE TO 110
0448*     SET CHAR, SIZE TO 2           -?SPRM
0449*     SET PARITY BIT
0450*     SET ENABLE BIT
0451*
0452*     SET ?PPRM TO ON               -?PPRM
0453*
0454* ABOVE ACTIONS WILL BE TAKEN FOR EACH PORT
0455* WITHIN THE RANGE AS INDICATED BY A & B.
0456*
0457 07045 000000 ISUBA NOP
0458 07046 074267 STB STMP          SAVE LIMIT.
0459 07047 040347 ADA TTYTP        ADD ON TABLE ADDRESS,
0460 07050 104000 LDB A,I              B=> ?TNUM
0461 07051          ISBA1 EQU *
0462 07051 100001 LDA B,I              A= ?TNUM
0463 07052 070274 SIA TEMP1          SAVE IT.
0464 07053 044170 ADI .+?TYPE        B=> ?TYPE
0465 07054 002400 CLA              SET ?TYPE=0.
0466 07055 170001 STA B,I
0467 07056 006004 INB              B=> ?CDLY
0468 07057 003400 CCA              SET ?CDLY=-1.
0469 07060 170001 SIA B,I
0470 07061 006004 INB              B=> ?LDLY
0471 07062 002400 CLA              SET ?LDLY=0.
0472 07063 170001 STA B,I
0473 07064 044157 ADB .+?RPRM=?LDLY B=> ?RPRM
0474 07065 063041 LDA RPINT          SET ?RPRM
0475 07066 170001 STA B,I
0476 07067 006004 INB              B=> ?SPRM
0477 07070 063042 LDA SPINT          SET ?SPRM
0478 07071 170001 STA B,I
0479 07072 006004 INB              B=> ?PPRM
0480 07073 000274 LDA TEMP1
0481 07074 001765 ALF,CLE,ERA  ADJUST TTY NR. TO 0-15.
0482 07075 001300 RAR              UNIT# IN BITS 10-13.
0483 07076 033044 IOR DTRON        SET "DATA TERM. READY ON" IN
0484 07077 170001 STA B,I              ?PPRM
0485 07100 000274 LDA TEMP1
0486 07101 001727 ALF,ALF          TTY NR. INTO LOWER.
0487 07102 050267 CPA STMP          DONE?
0488 07103 127045 JMP ISUBA,I      YES. EXIT.
0489 07104 044155 ADB .+TTY01-TTY00+?TNUM=?PPRM  MOVE TO NEXT

```

0490 07105 027051 JMP ISBA1

0491*

0492*

0493*

0494*

0495* ENTER WITH A=STARTING PORT#.

0496* SUBROUTINE SETS THE ENABLE BIT IN ?RPRM TO 0

0497* AND SETS ?PPRM TO OFF FOR EACH PORT STARTING

0498* WITH THE PORT# AS INDICATED BY A AND ENDING

0499* AT THE LAST PORT.

0500*

0501 07106 000000 ISUBB NOP

0502 07107 040347 ADA TTYTP ADD ON TABLE ADDRESS.

0503 07110 164000 LUB A,I B=> ?TNUM

0504 07111 ISBB1 EQU *

0505 07111 160001 LDA B,I A= ?TNUM

0506 07112 070274 STA TEMP1 SAVE IT.

0507 07113 044175 ADB .+?RPRM B=> ?RPRM

0508 07114 100001 LDA B,I A= ?RPRM

0509 07115 010322 AND NBT13 SET ENABLE BIT=0.

0510 07116 170001 STA B,I

0511 07117 044156 ADB .+?PPRM-?RPRM B=> ?PPRM

0512 07120 060274 LDA TEMP1

0513 07121 001765 ALF,CLE,ERA ADJUST TTY NR. TO 0-15.

0514 07122 001323 RAR,RAR UNIT# IN BITS 10-13.

0515 07123 033043 IOR DTROF SET "DATA TERM. READY OFF" IN

0516 07124 170001 STA B,I ?PPRM

0517 07125 000274 LDA TEMP1

0518 07126 001727 ALF,ALF TTY NR. INTO LOWER.

0519 07127 050211 CPA B37 DONE?

0520 07130 127106 JMP ISUBB,1 YES. EXIT.

0521 07131 044155 ADB .+TTY01-TTY00+?TNUM=?PPRM MOVE TO NEXT

0522 07132 027111 JMP ISBB1

```

0002*
0003*
0004 07133 000000 PWF1 NOP
0005 07134 102204 SFC 4 TEST FOR FAIL OR RESTART.
0006 07135 027205 JMP PWF1 RESTART.
0007*
0008* POWER FAIL SECTION.
0009*
0010 07136 073573 SIA PWFAT SAVE REGISTERS
0011 07137 077574 STB PWFBT TEMPORARILY.
0012 07140 005500 ERB
0013*
0014 07141 003400 CLA SET FLAG TO INDICATE THAT
0015 07142 073575 SIA PWFFF MACHINE WAS RUNNING AT TIME OF
0016* POWER FAILURE.
0017*
0018 07143 063133 LDA PWF1 TEST FOR POWER FAIL OUT OF
0019 07144 043572 ADA PWF01 RESTART SECTION.
0020 07145 002021 SSA, RSS
0021 07146 027203 JMP PWF2 FAILED IN RESTART SECTION.
0022*
0023 07147 077600 STB PWF0 NORMAL POWER FAIL.
0024 07150 063573 LDA PWFAT SAVE REGISTERS.
0025 07151 073570 STA PWF0
0026 07152 007574 LDB PWFBT
0027 07153 077577 STB PWF0
0028 07154 063133 LDA PWF1 SAVE POWER FAIL RETURN ADR.
0029 07155 073001 STA PWF0
0030*
0031* GET FLAGS FOR ALL DEVICES THAT CAN INTERRUPT.
0032*
0033 07156 002400 CLA
0034 07157 102211 SFC C2 CHECK FLAG OF SEND CHANNEL.
0035 07158 030160 IOR BIT2 SET BIT2, IF SET.
0036 07161 102212 SFC TBASE CHECK FLAG OF TBG.
0037 07162 030164 IOR BIT3 SET BIT3, IF SET.
0038 07163 102213 SFC MPX CHECK FLAG OF 1ST MUX.
0039 07164 030174 IOR BIT4 SET BIT4, IF SET.
0040 07165 102215 SFC DSCB1 CHECK FLAG OF 1ST DSC.
0041 07166 030300 IOR BIT6 SET BIT6, IF SET.
0042 07167 017562 JSB CHECK MORE THAN 16 PORTS?
0043 07170 002001 RSS
0044 07171 027176 JMP PWF1 NO.
0045 07172 102216 SFC MPY YES, CHECK FLAG OF 2ND MUX.
0046 07173 030301 IOR BIT7 SET BIT7, IF SET.
0047 07174 102220 SFC DSCB2 CHECK FLAG OF 2ND DSC.
0048 07175 030303 IOR BIT9 SET BIT9, IF SET.
0049 07176 PWF1 EQU *
0050 07176 073606 STA PWF0
0051*
0052*
0053 07177 006400 CLB
0054 07200 102200 SFC 0 IF CENTRAL INTERRUPT FLAG IS
0055 07201 067325 LDB STF0 SET, STORE "STF 0". OTHERWISE
0056 07202 077500 STB PWF0 STORE "NOP".
0057*

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0058 07203 106704 POW2 CLC 4 SET FOR RESTART,
0059 07204 102004 HLI 4 DONE,
0060*
0061* RESTART SECTION,
0062*
0063 07205 103704 POW1 STC 4,C RESET FOR POWER FAIL,
0064 07206 003575 LDA POWFF WAS I/O PROCESSOR RUNNING WHEN
0065 07207 002000 SZA,RSS POWER WENT DOWN?
0066 07210 026747 JMP INI NO, DO A COMPLETE RESTART.
0067*
0068 07211 002400 CLA YES, SET FAIL INDIC.=0,
0069 07212 073575 STA POWFF
0070*
0071 07213 000163 LDA .+7 SET J AS POWER FAIL POINTER
0072 07214 073605 STA POWJ AND I AS RECEIVE CHANNEL
0073 07215 002004 INA POINTER.
0074 07216 073604 STA POWI
0075 07217 000157 LDA .+3
0076 07220 102012 UTA TBASE RESET TBG FREQUENCY,
0077*
0078* NO, TEST THE DEVICES. IF THE FLAG WAS CLEAR, PER-
0079* FORM A "CLF". IF IT WAS SET, TAKE STRONGER
0080* ACTION,
0081*
0082 07221 003606 POW4 LDA PWFLG GET INDICATOR. THE ONE TO BE
0083 07222 001300 RAR TESTED IS IN BIT0 AND I*ITS
0084 07223 073600 STA PWFLG SELECT CODE.
0085 07224 000010 SLA
0086 07225 027244 JMP POW5 FLAG IS SET!
0087*
0088* FLAG WAS NOT SET.
0089*
0090 07226 003604 LDA POWI CONSTRUCT "CLF SC" INSTR.
0091 07227 043327 ADA CLF0
0092 07230 073231 STA **+1
0093 07231 000000 NOP EXECUTE "CLF SC" INSTR,
0094 07232 003604 POW6 LDA POWI TEST IF DONE.
0095 07233 017562 JSB CHECK MORE THAN 16 PORTS?
0096 07234 027241 JMP POWF2 YES.
0097 07235 000171 CPA .+15B NO, CHECK FOR DSCB1 LOC.
0098 07236 027336 JMP POW14 DONE.
0099 07237 POWF3 EQU *
0100 07237 037604 ISZ POWI NOT DONE, BUMP I AND LOOP.
0101 07240 027221 JMP POW4
0102*
0103 07241 POWF2 EQU *
0104 07241 000174 CPA .+20B CHECK FOR DSCB2 LOC.
0105 07242 027336 JMP POW14 DONE.
0106 07243 027237 JMP POWF3 NOT DONE.
0107*
0108* FLAG WAS SET. TEST IF DRIVER HAD ACTUALLY BEEN
0109* ENTERED, IF SO, PERFORM A DUMMY INTERRUPT
0110* TO PREVENT IT FROM BEING REENTERED.
0111*
0112 07244 067620 POW5 LDB POWTB COMPUTE LOCATION OF RET. ADR.
0113 07245 047605 ADB POWJ OF HIGHEST PRIORITY ROUTINE

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0114	07246	160001	LDB B,I	NOT YET TESTED.
0115	07247	160001	LDA B,I	GET ITS RET. ADR.
0116	07250	067620	LDB POWTB	POINT TO RET. ADR. OF ROUTINE.
0117	07251	047604	ADB POWI	TEST FOR INTERRUPT OUT OF
0118	07252	003000	CMA	THAT ROUTINE.
0119	07253	073003	STA POWSV	SAVE RETURN ADDRESS.
0120	07254	140001	ADA B,I	
0121	07255	002021	SSA,RSS	
0122	07256	027232	JMP POW6	INTERRUPT WAS PENDING.
0123*				
0124	07257	044165	ADB ,+11B	
0125	07260	140001	ADA B,I	
0126	07261	002020	SSA	
0127	07262	027265	JMP POW3	
0128	07263	044176	ADB ,+22B	
0129	07264	027302	JMP POW10	
0130	07265		POW3 EQU *	
0131	07265	044165	ADB ,+11B	
0132	07266	063603	LDA POWSV	A=RETURN ADDRESS.
0133	07267	140001	ADA B,I	
0134	07270	002021	SSA,RSS	
0135	07271	027232	JMP POW6	INTERRUPT PENDING.
0136	07272	044165	ADB11 ADB ,+11B	
0137	07273	140001	ADA B,I	
0138	07274	002021	SSA,RSS	
0139	07275	027302	JMP POW10	
0140	07276	063603	LDA POWSV	A=RETURN ADDRESS.
0141	07277	043617	ADA LMXOR	
0142	07300	002020	SSA	
0143	07301	027232	JMP POW6	INTERRUPT WAS PENDING.
0144	07302		POW10 EQU *	
0145	07302	063604	LDA POWI	
0146	07303	050167	CPA ,+13B	I=> MPX?
0147	07304	002001	RSS	
0148	07305	027311	JMP POW15	NO.
0149	07306	017554	JSB MUXCK	YES, YFLAG=0?
0150	07307	027316	JMP POW16	YES.
0151	07310	027232	JMP POW6	NO, 2ND MUX BEING SERVICED.
0152	07311		POW15 EQU *	
0153	07311	050172	CPA ,+16B	I=>MPY?
0154	07312	002001	RSS	
0155	07313	027316	JMP POW16	NO.
0156	07314	017554	JSB MUXCK	YES, YFLAG=0?
0157	07315	027232	JMP POW6	YES, 1ST MUX BEING SERVICED.
0158*				
0159*	DRIVER WAS ENTERED. PERFORM A DUMMY INTERRUPT			
0160*	TO PREVENT AN UNWANTED ONE LATER.			
0161*				
0162	07316		POW16 EQU *	
0163	07316	063272	LDA ADB11	SET "ADB ,+11B" " IN TRAP CELL.
0164	07317	173604	STA POWI,I	
0165	07320	063604	LDA POWI	
0166	07321	043607	ADA STC0	CREATE "STC SC"
0167	07322	073324	SIA POWST	AND
0168	07323	023611	XOR B4000	"CLC SC" INSTR.
0169	07324	102700	POWST STC 0	EXECUTE "STC SC".

0170	07325	102100	STF0	SIF 0	ENABLE INTERRUPTS, CAUSES ADDI-
0171	07326	073330		STA POWCL	TION OF 128 TO B-REGISTER,
0172	07327	103100	CLF0	CLF 0	DISABLE INTERRUPTS,
0173	07330	106700	POWCL	CLC 0	EXECUTE "CLC SC",
0174	07331	160001		LDA B,I	RESTORE TRAP CELL
0175	07332	173604		STA POWI,I	CONTENTS,
0176	07333	063604		LDA POWI	UPDATE INTERRUPT BHAIN
0177	07334	073600		STA POWJ	POINTER,
0178	07335	027232		JMP POW6	TEST NEXT DRIVER,
0179*					
0180*					
0181*	ALL DUMMY INTERRUPTS ARE DONE.				
0182*	NOW DO THE FOLLOWING:				
0183*					
0184*					
0185*	START UP INTERCONNECT.				
0186*	START UP TBG.				
0187*					
0188	07336		POW14	EQU *	
0189	07336	103710		SIC C1,C	START UP RECEIVE CHANNEL,
0190	07337	060251		LDA MTEMP	OUTPUT LAST DATA WORD
0191	07340	102611		UTA C2	TO SEND CHANNEL,
0192	07341	102111		SIF C2	
0193	07342	063602		LDA POWFL	GET INTERRUPT INDICATOR,
0194	07343	010160		AND .+4	
0195	07344	002003		SZA,RSS	WAS FLAG SET?
0196	07345	103711		SIC C2,C	NO. 2116 NEVER RESPONDED.
0197	07346	106711		CLC C2	YES, WE WANT NO INTERRUPT.
0198	07347	102712		SIC TBASE	START UP TBG.
0199	07350	063615		LDA CKFLG	IF FLAG=0 DO NOT OUTPUT
0200	07351	002003		SZA,RSS	PARAMETERS TO MUX AND
0201	07352	027474		JMP POW13	DSC BOARDS.
0202*					
0203*					
0204*	RE-INSTATE PARAMETERS ON MUX BOARD(S)				
0205*	AND DSC BOARD(S).				
0206*					
0207*					
0208*	RE-INSTATE 1ST MUX AND 1ST DSC.				
0209*					
0210	07353	063040		LDA NNPRT	
0211	07354	040134		ADA .-16	
0212	07355	067040		LDB NNPRT	
0213	07356	002021		SSA,RSS	MORE THAN 16 PORTS?
0214	07357	064173		LDB .+15	YES,
0215	07360	007000		CMB	NO.
0216	07361	077612		STB CTEMP	SET COUNTER,
0217	07362	067616		LDB TTKP	B=> ?RPRM OF TTY00.
0218	07363		POW7	EQU *	
0219	07363	017502		JSB POW30	CHECK SEEKING.
0220	07364	160001		LDA B,I	A = ?RPRM
0221	07365	000004		INB	B=> ?SPRM
0222	07366	077613		STB VTEMP	SAVE POINTER TO ?SPRM
0223	07367	044132		ADB .+?TNUM=?SPRM	B=> ?TNUM
0224	07370	164001		LDB B,I	B = ?TNUM
0225	07371	077614		STB FINUM	SAVE IT.

0226	07372	017507	JSB POW31	OUTPUT ?RPRM
0227	07373	017502	JSB POW30	CHECK SEEKING.
0228	07374	163613	LDA VTEMP, I	A = ?SPRM
0229	07375	067614	LDB FTNUM	B = ?TNUM
0230	07376	017507	JSB POW31	OUTPUT ?SPRM
0231	07377	017531	JSB POW17	IF INPUT MODE, CLEAR DIBT.
0232	07400	027411	JMP POW8	IF OUTPUT MODE, SET B = SYNC.CHAR.
0233	07401	017502	JSB POW30	CHECK SEEKING.
0234	07402	060001	LDA B	A = SYNC.CHAR.
0235	07403	067613	LDB VTEMP	B = > ?SPRM
0236	07404	044132	ADB . + ?TNUM = ?SPRM	
0237	07405	054103	CPB LPTTY	DOES USER HAVE LP?
0238	07406	027411	JMP POW8	YES.
0239	07407	067614	LDB FTNUM	NO. OUTPUT SYNC CHAR.
0240	07410	017507	JSB POW31	
0241	07411		POW8 EQU *	
0242	07411	067613	LDB VTEMP	B = > ?SPRM
0243	07412	006004	INB	B = > ?PPRM
0244	07413	160001	LDA B, I	A = ?PPRM
0245	07414	033610	IOR B360	TURN ON "DTR" AND "RQS".
0246	07415	102615	OTA DSCB1	OUTPUT PHONES PARAM.
0247	07416	044176	ADB . + TTY01 = TTY00 + ?RPRM = ?PPRM	MOVE TO NEXT
0248	07417	037612	ISZ CTEMP	DONE?
0249	07420	027363	JMP POW7	NO. GO BACK.
0250	07421	063040	LDA NNPRT	YES. ONE OR TWO BOARDS?
0251	07422	040134	ADA . - 16	
0252	07423	002020	SSA	
0253	07424	027465	JMP POW9	ONE.
0254*				TWO. RE-INSTATE 2ND MUX AND
0255*				2ND DSC.
0256*				
0257	07425	003000	CMA	SET COUNTER.
0258	07426	073612	STA CTEMP	
0259	07427		POW11 EQU *	
0260	07427	017515	JSB POW32	CHECK SEEKING.
0261	07430	160001	LDA B, I	A = ?RPRM
0262	07431	006004	INB	B = > ?SPRM
0263	07432	077613	STB VTEMP	SAVE POINTER TO ?SPRM
0264	07433	044132	ADB . + ?TNUM = ?SPRM	B = > ?TNUM
0265	07434	164001	LDB B, I	B = ?TNUM
0266	07435	077614	STB FTNUM	SAVE IT.
0267	07436	017522	JSB POW33	OUTPUT ?RPRM
0268	07437	017515	JSB POW32	CHECK SEEKING.
0269	07440	163613	LDA VTEMP, I	A = ?SPRM
0270	07441	067614	LDB FTNUM	B = ?TNUM
0271	07442	017522	JSB POW33	OUTPUT ?SPRM
0272	07443	017531	JSB POW17	IF INPUT MODE, CLEAR DIBT.
0273	07444	027455	JMP POW12	IF OUTPUT MODE, SET B = SYNC.CHAR.
0274	07445	017515	JSB POW32	CHECK SEEKING.
0275	07446	060001	LDA B	A = SYNC.CHAR.
0276	07447	067613	LDB VTEMP	B = > ?SPRM
0277	07450	044132	ADB . + ?INUM = ?SPRM	
0278	07451	054103	CPB LPTTY	DOES USER HAVE LP?
0279	07452	027455	JMP POW12	YES.
0280	07453	067614	LDB FTNUM	NO. OUTPUT SYNC CHAR.
0281	07454	017522	JSB POW33	

```

0282 07455          POW12 EQU *
0283 07455 007613   LDB VTEMP      B=> ?SPRM
0284 07456 006004   INB             B=> ?PPRM
0285 07457 100001   LDA M,I        A= ?PPRM
0286 07460 033610   LOR B360       TURN ON "DTR" AND "RQS".
0287 07461 102620   OIA DSCB2      OUTPUT PHONE PARAM.
0288 07462 044176   ADB .+ITY01-ITY00+?RPRM=?PPRM MOVE TO NEXT
0289 07463 037612   ISZ CIEMP      DONE?
0290 07464 027427   JMP POW11      NO, GO BACK.

```

YES.

0292* START UP MUX BOARD(S) AND DSC BOARD(S).

0293*

```

0294 07465          POW9 EQU *
0295 07465 102713   STC MPX        START UP 1ST MUX.
0296 07466 102715   STC DSCB1      START UP 1ST DSC.
0297 07467 017562   JSB CHECK      HOW MANY PORTS?
0298 07470 002001   RSS           MORE THAN 16 PORTS.
0299 07471 027474   JMP POW13      UP TO 16 PORTS.
0300 07472 102716   STC MPY        START UP 2ND MUX.
0301 07473 102720   STC DSCB2      START UP 2ND DSC.

```

0302* RESTORE REGISTERS.

0304*

```

0305 07474          POW13 EQU *
0306 07474 007000   LDB POWE       RESTORE
0307 07475 005600   ELB            E,
0308 07476 007577   LDB POWB       B AND
0309 07477 003576   LDA POWA       A REGISTERS.

```

0310* RESET INTERRUPT SYSTEM TO SAME AS BEFORE

0312* POWER FAILURE.

0313*

```

0314 07500 000000   POWND NOP
0315 07501 127601   JMP POWP,I     RETURN.

```

0316*

```

0310*
0319 07502 000000 POW30 NOP CHECK SEEKING ON 1ST MUX.
0320 07503 102514 LIA MPX+1
0321 07504 002020 SSA
0322 07505 027503 JMP *-2
0323 07506 127502 JMP POW30,I
0324*
0325 07507 000000 POW31 NOP OUTPUT TO 1ST MUX.
0326 07510 005222 RBL,RBL
0327 07511 102613 CIA MPX
0328 07512 106614 OTB MPX+1
0329 07513 102713 SIC MPX
0330 07514 127507 JMP POW31,I
0331*
0332 07515 000000 POW32 NOP CHECK SEEKING ON 2ND MUX.
0333 07516 102517 LIA MPY+1
0334 07517 002020 SSA
0335 07520 027516 JMP *-2
0336 07521 127515 JMP POW32,I
0337*
0338 07522 000000 POW33 NOP OUTPUT TO 2ND MUX.
0339 07523 005765 BLF,CLE,ERB
0340 07524 005300 RBR
0341 07525 102616 CIA MPY
0342 07526 106617 OTB MPY+1
0343 07527 102716 SIC MPY
0344 07530 127522 JMP POW33,I
0345*
0346* RESET UCRT AND DIRT BITS.
0347* CHECK FOR INPUT OR OUTPUT MODE.
0348* IF INPUT, EXIT TO (P+1).
0349* IF OUTPUT, SET B=PROPER SYNC, CHAR.
0350* AND EXIT TO (P+2).
0351*
0352 07531 000000 POW17 NOP
0353 07532 007613 LDB VIEMP B=> ?SPRM
0354 07533 044146 ADB .+?TYPE-?SPRM B=> ?TYPE
0355 07534 160001 LQA B,I A= ?TYPE
0356 07535 010335 AND NDUBT RESET UCRT AND DIRT BITS.
0357 07536 170001 STA B,I
0358 07537 044150 ADB .+?STAT-?TYPE B=> ?SIAT
0359 07540 160001 LQA B,I A= ?SIAT
0360 07541 010303 AND NIBT
0361 07542 002003 SZA,RSS NIBT BIT SET?
0362 07543 127531 JMP POW17,I NO. EXIT TO (P+1).
0363 07544 002022 LDA SYNCC YES, A=SYNC, CHAR.
0364 07545 044160 ADB .+?TYPE-?STAT B=> ?TYPE
0365 07546 164001 LDB B,I B= ?TYPE
0366 07547 006002 SZB ADD BIT7 FOR
0367 07550 030301 IOR SLBIT SELECTRIC.
0368 07551 004000 LDB A B=PROPER SYNC, CHAR.
0369 07552 037531 ISZ POW17 EXIT TO (P+2).
0370 07553 127531 JMP POW17,I
0371*
0372*
0373*

```

```

0374*
0375 07554 000000 MUXCK NOP
0376 07555 060100 LDA YFLAG
0377 07556 002003 SZA,RSS YFLAG=0?
0378 07557 127554 JMP MUXCK,I YES, RETURN TO (P+1)
0379 07560 037554 ISZ MUXCK NO, RETURN TO (P+2)
0380 07561 127554 JMP MUXCK,I
0381*
0382* IF MORE THAN 16 PORTS, EXIT TO (P+1).
0383* IF NOT MORE THAN 16 PORTS, EXIT TO (P+2).
0384*
0385 07562 000000 CHECK NOP
0386 07563 067040 LDB NNPRT
0387 07564 007004 CMB,INB
0388 07565 044173 ADB .+15 MORE THAN 16 PORTS?
0389 07566 006020 SSB
0390 07567 127562 JMP CHECK,I YES, EXIT TO (P+1).
0391 07570 037562 ISZ CHECK NO, EXIT TO (P+2).
0392 07571 127562 JMP CHECK,I
0393*
0394* CONSTANTS AND STORAGE.
0395*
0396 07572 170573 POWD1 ABS -POW1
0397 07573 000000 POWA1 BSS 1
0398 07574 000000 POWBT BSS 1
0399 07575 000000 POWFF NOP
0400 07576 000000 POWA BSS 1
0401 07577 000000 POWB BSS 1
0402 07600 000000 POWE BSS 1
0403 07601 000000 POWP BSS 1
0404 07602 000000 POWFL BSS 1
0405 07603 000000 POWSV BSS 1
0406 07604 000000 POWI BSS 1
0407 07605 000000 POWJ BSS 1
0408 07606 000000 PWFLG BSS 1
0409 07607 102700 STC0 STC 0
0410 07610 000360 B360 OCT 360
0411 07611 004000 B4000 OCT 4000
0412 07612 000000 CTEMP BSS 1
0413 07613 000000 VTEMP BSS 1
0414 07614 000000 FTNUM BSS 1
0415 07615 000000 CKFLG OCT 0
0416 07616 000377 TTRP DEF TTY00+?RPRM
0417 07617 000030 LMXOR ABS MUXRE-MUXOR+1
0418*
0419 07620 007612 POWTB DEF *-6
0420*
0421* THIS TABLE POINTS TO THE ENTRY POINTS FOR
0422* THE DRIVERS.
0423*
0424 07621 007601 DEF POWP POWER FAIL.
0425 07622 001556 DEF RFS RECEIVE CHANNEL.
0426 07623 000000 BSS 1 NO INTERRUPT.
0427 07624 006302 DEF TBGEN TBG.
0428 07625 001742 DEF MPXIO 1ST MUX.
0429 07626 000000 BSS 1 NO INTERRUPT.

```

0430	07627	004616	DEF DS101	1ST DSC.
0431	07630	001764	DEF MPY10	2ND MUX.
0432	07631	000000	BSS 1	NO INTERRUPT.
0433	07632	004737	DEF DS201	2ND DSC.
0434*				
0435*	THIS SECTION GIVES THE LENGTH OF EACH			
0436*	SO THAT THE POWER FAIL ROUTINE CAN DETERMINE			
0437*	WHETHER THE INTERRUPT OF THAT DRIVER HAD ACTUALLY			
0438*	OCCURRED OR WAS STILL PENDING AT THE TIME OF			
0439*	THE POWER FAILURE.			
0440*				
0441	07633	000105	ABS RFSE=RFS+1	RECEIVE CHANNEL.
0442	07634	000000	ABS 0	SEND CHANNEL.
0443	07635	000246	ABS TBGED-TBGEN+1	TBG.
0444	07636	001014	ABS MPXIE-MPXIO+1	1ST MUX
0445	07637	000000	ABS 0	NON-EXISTING.
0446	07640	000122	ABS DS1E-DS101+1	1ST DSC.
0447	07641	000772	ABS MPYIE-MPYIO+1	2ND MUX.
0448	07642	000000	ABS 0	NON-EXISTING.
0449	07643	000124	ABS DS2E-DS201+1	2ND DSC.
0450*				
0451*	THIS TABLE POINTS TO POSSIBLE SUBROUTINE			
0452*	ENTRY POINTS USED BY THE DRIVERS.			
0453*				
0454	07644	003342	DEF POC	
0455	07645	000000	BSS 1	
0456	07646	006302	DEF TBGEN	
0457	07647	005062	DEF ICNVR	
0458	07650	000000	BSS 1	
0459	07651	004616	DEF DS101	
0460	07652	005062	DEF ICNVR	
0461	07653	000000	BSS 1	
0462	07654	004737	DEF DS201	
0463*				
0464*	THIS SECTION GIVES THE LENGTH OF THE SUBROUTINES			
0465*	USED BY THE DRIVERS.			
0466*				
0467	07655	001230	ABS SERND=POC+1	
0468	07656	000000	ABS 0	
0469	07657	000246	ABS TBGED-TBGEN+1	
0470	07660	000552	ABS ICVRE-ICNVR+1	
0471	07661	000000	ABS 0	
0472	07662	000122	ABS DS1E-DS101+1	
0473	07663	000552	ABS ICVRE-ICNVR+1	
0474	07664	000000	ABS 0	
0475	07665	000124	ABS DS2E-DS201+1	
0476*				
0477*	THIS SECTION CONTAINS THE CORRECT CONTENTS			
0478*	OF THE TRAP CELLS.			
0479*				
0480	07666	114353	JSB PRFS,I	RECEIVE CHANNEL.
0481	07667	100711	CLC C2	SEND CHANNEL.
0482	07670	114341	JSB TBGDR,I	TBG.
0483	07671	114354	JSB PMPXI,I	1ST MUX (DATA).
0484	07672	000000	NOP	1ST MUX(STATUS).
0485	07673	114320	JSB DSDR1,I	1ST DSC.

0486 07674 114355
0487 07675 000000
0488 07676 114326

JSB PMPY1,I 2ND MUX (DATA).
NUP 2ND MUX (STATUS).
JSB DSDR2,I 2ND DSC.

0489*
0490*
0491*
0492*
0493*

```

0495*
0496* THIS ROUTINE IS USED TO SEND THE I/O PROCESSOR
0497* PROGRAM TO THE SYSTEM PROCESSOR IN THE EVENT
0498* THAT A DUMP IS DESIRED.
0499*
0500 07677 006400 CLB START AT LOCATION 0.
0501 07700 KSN EQU *
0502 07700 160001 LDA B,1
0503 07701 102310 SFS C1 WAIT FOR OTHER MACHINE
0504 07702 027701 JMP *-1 TO RESPONSE.
0505 07703 102610 OTA C1 OUTPUT.
0506 07704 103710 SIC C1,C TELL OTHER MACHINE.
0507 07705 006004 INB BUMP LOCATION.
0508 07706 054307 CPB BIT13 DONE?
0509 07707 102000 HLT
0510 07710 027700 JMP KSN NO. NEXT LOCATION.
0511*
0512*

```

0514*			
0515	07711		TIPT EQU *
0516	07711	000356	DEF TTY00
0517	07712	000402	DEF TTY01
0518	07713	000426	DEF TTY02
0519	07714	000452	DEF TTY03
0520	07715	000476	DEF TTY04
0521	07716	000522	DEF TTY05
0522	07717	000546	DEF TTY06
0523	07720	000572	DEF TTY07
0524	07721	000616	DEF TTY10
0525	07722	000642	DEF TTY11
0526	07723	000666	DEF TTY12
0527	07724	000712	DEF TTY13
0528	07725	000736	DEF TTY14
0529	07726	000762	DEF TTY15
0530	07727	001006	DEF TTY16
0531	07730	001032	DEF TTY17
0532	07731	001056	DEF TTY20
0533	07732	001102	DEF TTY21
0534	07733	001126	DEF TTY22
0535	07734	001152	DEF TTY23
0536	07735	001176	DEF TTY24
0537	07736	001222	DEF TTY25
0538	07737	001246	DEF TTY26
0539	07740	001272	DEF TTY27
0540	07741	001316	DEF TTY30
0541	07742	001342	DEF TTY31
0542	07743	001366	DEF TTY32
0543	07744	001412	DEF TTY33
0544	07745	001436	DEF TTY34
0545	07746	001462	DEF TTY35
0546	07747	001506	DEF TTY36
0547	07750	001532	DEF TTY37
0548*			


```

0550*
0551 07751 000000 BUF00 BSS BUFLN
0552 10147 000000 BUF01 BSS BUFLN
0553 10345 000000 BUF02 BSS BUFLN
0554 10543 000000 BUF03 BSS BUFLN
0555 10741 000000 BUF04 BSS BUFLN
0556 11137 000000 BUF05 BSS BUFLN
0557 11335 000000 BUF06 BSS BUFLN
0558 11533 000000 BUF07 BSS BUFLN
0559 11731 000000 BUF10 BSS BUFLN
0560 12127 000000 BUF11 BSS BUFLN
0561 12325 000000 BUF12 BSS BUFLN
0562 12523 000000 BUF13 BSS BUFLN
0563 12721 000000 BUF14 BSS BUFLN
0564 13117 000000 BUF15 BSS BUFLN
0565 13315 000000 BUF16 BSS BUFLN
0566 13513 000000 BUF17 BSS BUFLN
0567 13711 000000 BUF20 BSS BUFLN
0568 14107 000000 BUF21 BSS BUFLN
0569 14305 000000 BUF22 BSS BUFLN
0570 14503 000000 BUF23 BSS BUFLN
0571 14701 000000 BUF24 BSS BUFLN
0572 15077 000000 BUF25 BSS BUFLN
0573 15275 000000 BUF26 BSS BUFLN
0574 15473 000000 BUF27 BSS BUFLN
0575 15671 000000 BUF30 BSS BUFLN
0576 16067 000000 BUF31 BSS BUFLN
0577 16265 000000 BUF32 BSS BUFLN
0578 16463 000000 BUF33 BSS BUFLN
0579 16661 000000 BUF34 BSS BUFLN
0580 17057 000000 BUF35 BSS BUFLN
0581 17255 000000 BUF36 BSS BUFLN
0582 17453 000000 BUF37 BSS BUFLN
0583 17651 BSS
0584 END

```

** NO ERRORS*

WHERE ARE WE?

$$\begin{array}{r} 17677 \\ - 17651 \\ \hline 26 \\ 8 \end{array} = 22 \text{ WORDS LEFT}$$

ORG	***	00002/01	00013/01	00018/01	00022/01	00027/01	00031/01
		00036/01	00049/01				
		00122/01	00051/01	00127/01	00189/01	00190/01	00191/01
		00193/01	00205/01	00206/01	00207/01	00208/01	00209/01
		00072/02	00082/02	00087/02	00097/02	00115/02	00134/02
		00153/02	00163/02	00186/02	00207/02	00295/02	00329/02
		00355/02	00387/02	00389/02	00420/02	00422/02	00436/02
		00588/02	00607/02	00608/02	00611/02	00626/02	00049/03
		00055/03	00065/03	00106/03	00156/03	00159/03	00170/03
		00204/03	00246/03	00251/03	00281/03	00324/03	00333/03
		00339/03	00365/03	00380/03	00383/03	00385/03	00393/03
		00402/03	00408/03	00415/03	00419/03	00425/03	00427/03
		00439/03	00451/03	00551/03	00559/03	00570/03	00572/03
		00576/03	00599/03	00606/03	00614/03	00005/04	00067/04
		00079/04	00081/04	00116/04	00118/04	00130/04	00135/04
		00158/04	00160/04	00168/04	00178/04	00183/04	00194/04
		00208/04	00226/04	00237/04	00241/04	00253/04	00263/04
		00283/04	00291/04	00303/04	00307/04	00316/04	00319/04
		00333/04	00338/04	00348/04	00350/04	00353/04	00359/04
		00372/04	00374/04	00382/04	00384/04	00387/04	00388/04
		00409/04	00431/04	00438/04	00440/04	00448/04	00458/04
		00552/04	00563/04	00574/04	00594/04	00596/04	00607/04
		00625/04	00628/04	00630/04	00632/04	00634/04	00664/04
		00090/04	00693/04	00728/04	00732/04	00777/04	00779/04
		00783/04	00785/04	00787/04	00813/04	00833/04	00834/04
		00855/04	00859/04	00282/05	00371/05	00373/05	00531/05
		00014/06	00040/06	00043/06	00065/06	00075/06	00079/06
		00095/06	00103/06	00109/06	00120/06	00124/06	00132/06
		00144/06	00153/06	00175/06	00191/06	00198/06	00200/06
		00242/06	00248/06	00252/06	00256/06	00264/06	00267/06
		00292/06	00295/06	00299/06	00313/06	00328/06	00331/06
		00347/06	00464/06	00473/06	00489/06	00507/06	00511/06
		00071/07	00075/07	00097/07	00104/07	00124/07	00128/07
		00136/07	00146/07	00153/07	00194/07	00211/07	00214/07
		00236/07	00247/07	00251/07	00264/07	00277/07	00288/07
		00358/07	00364/07	00388/07			
.100		00156/01	00060/03				
.40		00157/01	00057/03				
?A I M		00328/01	00332/01	00115/02			
?B E N D		00293/01	00297/01	00336/03	00339/03	00079/04	00081/04
?B G I N		00290/01	00293/01	00383/03	00385/03	00384/04	00388/04
		00242/06					
?B H E D		00283/01	00287/01	00081/04	00148/04	00160/04	00329/04
		00382/04	00384/04	00388/04	00248/06		00338/04
?B P N T		00270/01	00276/01	00097/02	00385/03	00283/04	00242/06
?B S A V		00207/01	00290/01	00393/03	00158/04	00160/04	00333/04

?BSTR	00276/01	00283/01	00333/03	00336/03	00339/03	00291/04	00333/04
?CCNT	00206/01	00244/01	00270/01	00365/03	00380/03	00383/03	00430/03
	00316/04	00319/04	00348/04	00353/04	00359/04	00369/04	00087/06
	00095/06	00120/06	00124/06	00132/06	00198/06	00200/06	00240/06
	00256/06						
?CDLY	00369/01	00372/01	00588/02	00419/03	00466/04		
?DCNT	00375/01	00378/01	00389/02	00427/03	00430/03	00200/06	00252/06
?LDLY	00372/01	00375/01	00626/02	00473/06			
?PHDN	00336/01	00339/01	00307/04	00689/04	00693/04	00728/04	00732/04
	00033/04	00037/04	00055/04	00059/04	00040/06	00043/06	
?PPRM	00388/01	00028/04	00632/04	00664/04	00781/04	00785/04	00813/04
	00065/06	00142/06	00175/06	00292/06	00295/06	00328/06	00331/06
	00489/06	00511/06	00521/06	00247/07	00288/07		
?RPRM	00382/01	00385/01	00333/02	00514/02	00402/03	00130/04	00135/04
	00206/04	00208/04	00253/04	00263/04	00409/04	00448/04	00466/04
	00552/04	00563/04	00079/06	00109/06	00295/06	00331/06	00473/06
	00507/06	00511/06	00247/07	00288/07	00416/07		
?SCNT	00378/01	00382/01	00142/06	00256/06			
?SPRM	00385/01	00388/01	00118/04	00130/04	00278/06	00292/06	00313/06
	00328/06	00223/07	00236/07	00264/07	00277/07	00354/07	
?STAI	00297/01	00328/01	00067/02	00072/02	00097/02	00329/02	00333/02
	00355/02	00387/02	00324/03	00365/03	00380/03	00396/03	00402/03
	00415/03	00599/03	00005/04	00057/04	00072/04	00168/04	00178/04
	00183/04	00194/04	00206/04	00226/04	00237/04	00241/04	00273/04
	00291/04	00303/04	00307/04	00319/04	00359/04	00440/04	00448/04
	00632/04	00664/04	00689/04	00693/04	00728/04	00732/04	00785/04
	00813/04	00833/04	00837/04	00855/04	00859/04	00014/06	00040/06
	00043/06	00065/06	00087/06	00103/06	00120/06	00124/06	00132/06
	00175/06	00191/06	00248/06	00252/06	00358/07	00364/07	
?TIMU	00332/01	00336/01	00072/04	00095/06			
?TNUM	00263/01	00266/01	00393/03	00135/04	00183/04	00208/04	00338/04
	00353/04	00278/06	00313/06	00489/06	00521/06	00223/07	00236/07
	00264/07	00277/07					
?TYPE	00339/01	00369/01	00072/02	00082/02	00087/02	00115/02	00387/02
	00389/02	00186/03	00204/03	00251/03	00408/03	00415/03	00419/03
	00439/03	00451/03	00536/03	00116/04	00118/04	00241/04	00402/04
	00409/04	00431/04	00440/04	00574/04	00103/06	00109/06	00191/06
	00190/06	00464/06	00354/07	00358/07	00364/07		
A	00000/01	00004/01	00610/01	00630/01	00058/02	00121/02	00141/03
	00341/03	00501/03	00084/04	00120/04	00627/04	00780/04	00049/05
	00450/05	00519/05	00460/06	00503/06	00368/07		

ABURT	00351/02	00063/02					
ABR	00692/01	00361/02					
ABT	00004/04	00662/01					
ADP11	00136/07	00103/07					
ALI	00328/04	00648/01					
ATEMP	00159/01	00738/01	00750/01	00762/01			
B	00009/01	00068/02	00073/02	00081/02	00088/02	00117/02	00177/02
	00104/02	00201/02	00204/02	00208/02	00245/02	00247/02	00330/02
	00332/02	00334/02	00356/02	00407/02	00515/02	00589/02	00627/02
	00139/03	00187/03	00205/03	00211/03	00213/03	00215/03	00252/03
	00325/03	00334/03	00337/03	00340/03	00343/03	00350/03	00356/03
	00357/03	00366/03	00368/03	00378/03	00379/03	00382/03	00384/03
	00386/03	00388/03	00390/03	00392/03	00397/03	00399/03	00401/03
	00403/03	00409/03	00413/03	00416/03	00420/03	00428/03	00431/03
	00433/03	00436/03	00440/03	00452/03	00479/03	00481/03	00482/03
	00485/03	00492/03	00498/03	00504/03	00580/03	00587/03	00600/03
	00602/03	00607/03	00619/03	00006/04	00009/04	00058/04	00060/04
	00068/04	00071/04	00082/04	00089/04	00093/04	00117/04	00128/04
	00131/04	00134/04	00136/04	00149/04	00151/04	00159/04	00161/04
	00169/04	00171/04	00179/04	00182/04	00195/04	00197/04	00199/04
	00201/04	00205/04	00207/04	00209/04	00227/04	00230/04	00238/04
	00240/04	00242/04	00246/04	00254/04	00256/04	00264/04	00266/04
	00274/04	00276/04	00284/04	00286/04	00292/04	00294/04	00304/04
	00306/04	00309/04	00318/04	00320/04	00322/04	00330/04	00332/04
	00334/04	00336/04	00339/04	00349/04	00354/04	00360/04	00362/04
	00370/04	00383/04	00385/04	00389/04	00411/04	00432/04	00441/04
	00447/04	00450/04	00455/04	00463/04	00470/04	00475/04	00553/04
	00504/04	00575/04	00629/04	00656/04	00658/04	00665/04	00681/04
	00686/04	00688/04	00691/04	00720/04	00724/04	00727/04	00730/04
	00782/04	00804/04	00806/04	00814/04	00825/04	00830/04	00832/04
	00835/04	00847/04	00851/04	00854/04	00857/04	00112/05	00120/05
	00129/05	00136/05	00186/05	00277/05	00286/05	00316/05	00320/05
	00322/05	00326/05	00330/05	00334/05	00355/05	00400/05	00517/05
	00016/06	00020/06	00024/06	00030/06	00035/06	00041/06	00044/06
	00057/06	00063/06	00064/06	00066/06	00080/06	00088/06	00096/06
	00099/06	00102/06	00104/06	00108/06	00110/06	00121/06	00125/06
	00137/06	00143/06	00173/06	00176/06	00190/06	00192/06	00196/06
	00199/06	00201/06	00203/06	00216/06	00239/06	00241/06	00243/06
	00245/06	00247/06	00250/06	00253/06	00255/06	00275/06	00279/06
	00293/06	00310/06	00314/06	00329/06	00361/06	00462/06	00466/06
	00409/06	00472/06	00475/06	00478/06	00484/06	00505/06	00508/06
	00510/06	00516/06	00114/07	00115/07	00120/07	00125/07	00133/07
	00137/07	00174/07	00220/07	00224/07	00234/07	00244/07	00261/07
	00265/07	00275/07	00285/07	00355/07	00357/07	00359/07	00365/07
	00502/07						
B101	00551/05	00180/05					
B104	00552/05	00162/05					

B105 00553/05 00164/05
 B106 00554/05 00172/05
 B107 00555/05 00174/05
 B117 00556/05 00166/05
 B122 00557/05 00176/05
 B123 00558/05 00168/05
 B124 00559/05 00170/05
 B125 00560/05 00178/05
 B133 00561/05 00157/05 00357/05
 B134 00562/05 00161/05 00361/05
 B135 00563/05 00159/05 00359/05
 B136 00605/05 00193/05 00377/05
 B137 00136/01 00007/03 00068/03
 B140 00564/05 00155/05 00367/05
 B173 00565/05 00167/05 00363/05
 B175 00566/05 00169/05 00365/05
 B176 00567/05 00171/05 00369/05
 B177 00137/01 00077/02 00114/02 00149/02 00410/02 00144/03 00593/04
 00114/05 00163/05
 B33 00533/05 00165/05
 B340 00138/01 00399/04
 B35 00536/05 00175/05
 B36 00537/05 00177/05
 B360 00410/07 00245/07 00286/07
 B37 00134/01 00002/01 00628/01 00056/02 00474/03 00179/05 00535/05
 00212/06 00363/06 00519/06
 B377 00139/01 00257/02 00606/02 00330/03 00063/04 00087/04 00100/04
 00114/04 00451/04 00468/04 00473/04 00554/04 00518/05
 B4000 00411/07 00168/07

B40	00538/05	00031/05					
B47	00539/05	00154/05					
B50	00540/05	00156/05					
B51	00541/05	00158/05					
B55	00542/05	00072/05					
B57	00543/05	00160/05					
B7	00133/01	00007/01	00566/04	00033/05			
B71M	00147/01	00007/04					
B77	00550/05	00008/05					
BAUDT	00481/04	00453/04					
BFE	00694/01	00448/02	00115/03	00285/03	00355/04		
BFL	00693/01	00237/03	003/0/03				
BII0	00189/01	00299/01					
BII1	00190/01	00301/01	00350/01				
BII10	00199/01	00317/01					
BII11	00200/01	00318/01					
BII12	00201/01	00221/01	00208/03	00122/04	00417/04		
BII13	00202/01	00367/01	00157/02	00508/07			
BII14	00203/01	00225/01	00571/05				
BII15	00204/01	00325/01					
BII2	00191/01	00303/01	00351/01	00035/07			
BII3	00192/01	00304/01	00353/01	00037/07			
BII4	00193/01	00306/01	00355/01	00039/07			
BII5	00194/01	00308/01	00356/01				
BII6	00195/01	00310/01	00358/01	00111/05	00041/07		
BII7	00196/01	00224/01	00312/01	00360/01	00405/05	00046/07	
BII8	00197/01	00314/01	00342/02	00188/03	00212/03	00253/03	00453/03
	00288/05						
BII9	00198/01	00315/01	00048/07				

BKS	00381/04	00655/01			
BKSPC	00130/01	00142/02			
BLFN	00247/01	00294/02	00371/04	00386/04	
BUF00	00551/07	00393/01	00393/01	00394/01	00394/01
BUF01	00552/07	00399/01	00399/01	00400/01	00400/01
BUF02	00553/07	00405/01	00405/01	00406/01	00406/01
BUF03	00554/07	00411/01	00411/01	00412/01	00412/01
BUF04	00555/07	00417/01	00417/01	00418/01	00418/01
BUF05	00556/07	00423/01	00423/01	00424/01	00424/01
BUF06	00557/07	00429/01	00429/01	00430/01	00430/01
BUF07	00558/07	00435/01	00435/01	00436/01	00436/01
BUF10	00559/07	00441/01	00441/01	00442/01	00442/01
BUF11	00560/07	00447/01	00447/01	00448/01	00448/01
BUF12	00561/07	00453/01	00453/01	00454/01	00454/01
BUF13	00562/07	00459/01	00459/01	00460/01	00460/01
BUF14	00563/07	00465/01	00465/01	00466/01	00466/01
BUF15	00564/07	00471/01	00471/01	00472/01	00472/01
BUF16	00565/07	00477/01	00477/01	00478/01	00478/01
BUF17	00566/07	00483/01	00483/01	00484/01	00484/01
BUF20	00567/07	00489/01	00489/01	00490/01	00490/01
BUF21	00568/07	00495/01	00495/01	00496/01	00496/01
BUF22	00569/07	00501/01	00501/01	00502/01	00502/01
BUF23	00570/07	00507/01	00507/01	00508/01	00508/01
BUF24	00571/07	00513/01	00513/01	00514/01	00514/01
BUF25	00572/07	00519/01	00519/01	00520/01	00520/01
BUF26	00573/07	00525/01	00525/01	00526/01	00526/01
BUF27	00574/07	00531/01	00531/01	00532/01	00532/01
BUF32	00575/07	00537/01	00537/01	00538/01	00538/01

BUF 31	00576/07	00543/01	00543/01	00544/01	00544/01		
BUF 32	00577/07	00549/01	00549/01	00550/01	00550/01		
BUF 33	00578/07	00555/01	00555/01	00556/01	00556/01		
BUF 34	00579/07	00561/01	00561/01	00562/01	00562/01		
BUF 35	00580/07	00567/01	00567/01	00568/01	00568/01		
BUF 36	00581/07	00573/01	00573/01	00574/01	00574/01		
BUF 37	00582/07	00579/01	00579/01	00580/01	00580/01		
BUFA0	00427/02	00462/02					
BUFLN	00220/01	00246/01	00246/01	00247/01	00247/01	00248/01	00248/01
	00394/01	00394/01	00400/01	00400/01	00406/01	00406/01	00412/01
	00412/01	00418/01	00418/01	00424/01	00424/01	00430/01	00430/01
	00436/01	00436/01	00442/01	00442/01	00448/01	00448/01	00454/01
	00454/01	00460/01	00460/01	00466/01	00466/01	00472/01	00472/01
	00478/01	00478/01	00484/01	00484/01	00490/01	00490/01	00496/01
	00496/01	00502/01	00502/01	00508/01	00508/01	00514/01	00514/01
	00520/01	00520/01	00526/01	00526/01	00532/01	00532/01	00538/01
	00538/01	00544/01	00544/01	00550/01	00550/01	00556/01	00556/01
	00562/01	00562/01	00568/01	00568/01	00574/01	00574/01	00580/01
	00580/01	00551/07	00552/07	00553/07	00554/07	00555/07	00556/07
	00557/07	00558/07	00559/07	00560/07	00561/07	00562/07	00563/07
	00564/07	00565/07	00566/07	00567/07	00568/07	00569/07	00570/07
	00571/07	00572/07	00573/07	00574/07	00575/07	00576/07	00577/07
	00578/07	00579/07	00580/07	00581/07	00582/07		
C1	00011/01	00013/01	00052/01	00053/01	00054/01	00599/01	00676/01
	00716/01	00718/01	00518/03	00528/03	00536/03	00556/03	00604/03
	00624/03	00051/04	00088/04	00288/04	00296/04	00375/04	00555/04
	00567/04	00576/04	00373/06	00189/07	00503/07	00505/07	00506/07
C2	00012/01	00015/01	00705/01	00707/01	00708/01	00709/01	00370/06
	00371/06	00034/07	00191/07	00192/07	00196/07	00197/07	00481/07
CANCL	00129/01	00140/02	00293/05				
CBBT	00360/01	00521/02					
CBNBT	00361/01	00489/02					
CCBT	00355/01	00227/05	00242/05	00250/05	00254/05	00436/05	00465/05
CCHR1	00547/05	00093/05					
CCHR2	00545/05	00211/05					
CDBT	00350/01	00245/04					
CENT1	00546/05	00004/05	00547/05				

CENT2	00532/05	00209/05	00457/05				
CENT3	00548/05	00459/05					
CHECK	00385/07	00042/07	00095/07	00297/07	00390/07	00391/07	00392/07
CHS	00397/04	00656/01					
CIRCC	00549/05	00069/05					
CIRCD	00144/01	00078/02					
CKFLB	00415/07	00337/06	00358/06	00199/07			
CLFD	00172/07	00091/07					
CMA	00160/01	00595/01	00674/01				
CMB	00161/01	00596/01	00675/01				
CME	00162/01	00598/01	00672/01				
CNBT	00353/01	00218/05	00222/05	00246/05	00258/05	00440/05	00454/05
CNNBT	00354/01	00232/05					
CNTLQ	00127/01	00144/02					
CNTLW	00128/01	00146/02					
CRBT	00356/01	00473/05	00477/05	00487/05			
CRCLC	00146/01	00524/02					
CRCLD	00145/01	00456/03	00610/03	00342/05			
CRDL1	00596/02	00586/02					
CRDLY	00583/02	00421/02	00595/02				
CRLF	00131/01	00203/02					
CRNBT	00357/01	00492/05					
CTB2	00226/01	00106/05	00514/05				
CTBP1	00501/05	00108/05	00516/05				
CTBP2	00710/05	00220/01					
CTEMP	00412/07	00216/07	00240/07	00258/07	00289/07		
CXBT	00303/01	00127/02	00224/02				
DELAY	00404/02	00405/02					

DIBI	00367/01	00021/05	00051/05				
DMASK	00143/01	00415/02	004/4/02				
DMBPT	00264/03	00244/03					
DMESS	00260/03	00264/03	00264/03				
DS101	00616/04	00227/01	00672/04	00430/07	00446/07	00459/07	00472/07
DS102	00662/04	00638/04	00684/04	00694/04	00723/04	00733/04	
DS103	00080/04	00647/04	00710/04	00750/04			
DS104	00696/04	00643/04					
DS105	00736/04	00642/04					
DS106	00719/04	00760/04					
DS107	00644/04	00640/04					
DS1E	00761/04	00446/07	00472/07				
DS201	00/68/04	00228/01	00821/04	00433/07	00449/07	00462/07	00475/07
DS202	00811/04	00/91/04	00828/04	00838/04	00850/04	00860/04	
DS203	00824/04	00800/04	00844/04	00867/04			
DS204	00840/04	00796/04					
DS205	00863/04	00795/04					
DS206	00846/04	00868/04					
DS207	00797/04	00793/04					
DS2E	00872/04	00449/07	00475/07				
DSCB1	00026/01	00027/01	00621/04	00666/04	00671/04	00072/06	00179/06
	00294/06	00344/06	00040/07	00246/07	00296/07		
DSCB2	00035/01	00036/01	00773/04	00815/04	00820/04	00074/06	00181/06
	00330/06	00351/06	00047/07	00287/07	00301/07		
DSDR1	00227/01	00028/01	00485/07				
DSDR2	00228/01	00037/01	00488/07				
DSIP1	00163/01	00631/04	00636/04	00645/04	00698/04	00738/04	
DSIP2	00164/01	00784/04	00789/04	00798/04	00842/04	00865/04	
DSIS1	00165/01	00635/04					

DSIS2	00166/01	00788/04						
DTPNT	00014/01	00000/01						
DTRUF	00431/00	00145/06	00515/06					
DTRUN	00432/00	00076/06	00483/06					
ECF	00262/04	00643/01						
ECO	00252/04	00642/01						
EFBIT	00222/01	00265/04						
ENBT	00310/01	00230/02	00059/04	00025/06				
ENNBT	00311/01	00100/06						
EUBIT	00221/01	00255/04						
ETU	00095/01	00115/06						
FNC	00078/04	00017/01						
FTNUM	00414/07	00225/07	00229/07	00239/07	00266/07	00270/07	00280/07	
HIMSK	00153/01	00100/02	00346/03	00583/03	00125/04	00132/04		
HLTLD	00140/01	00031/06	00135/06					
HUBT	00317/01	00228/04	00036/06					
HUU	00225/04	00640/01						
HVL	00691/01	00264/02	00340/04					
IBF	00368/04	00650/01						
ICBT	00325/01	00200/04	00291/05					
ICNBT	00326/01	00503/02						
ICNV	00229/01	00119/02						
ICNVR	00007/05	00229/01	00140/05	00147/05	00151/05	00187/05	00283/05	
	00294/05	00302/05	00457/07	00460/07	00470/07	00473/07		
ICODE	00150/01	00721/01						
ICVRE	00524/05	00470/07	00473/07					
IDLE	00300/06	00230/01	00411/06	00422/06				
IDLEL	00230/01	00044/03	00095/03	00129/03	00220/03	00230/03	00294/03	

ILI	00282/04	00645/01						
ILPD	00414/06	00385/06						
IMUXR	00665/01	00220/02	00337/02	00417/02	00459/02	00475/02	00517/02	
	00526/02	00219/03	00406/03	00444/03	00458/03	00612/03	00138/04	
	00141/04	00210/04	00350/05	00082/06	00113/06			
INFE1	00271/06	00297/06						
INFE3	00306/06	00333/06						
INFE6	00336/06	00301/06						
INI	00356/06	00004/01	00066/07					
INI1	00369/06	00349/06	00352/06					
INIF	00289/06	00636/01						
INIF1	00228/06	00223/06						
INIFC	00233/06	00219/06						
INIFD	00237/06	00258/06						
INPC1	00126/05	00123/05						
INPC2	00124/05	00132/05						
INPC3	00148/05	00119/05						
INPC4	00182/05	00192/05	00194/05					
INPC5	00189/05	00181/05						
INPC6	00142/05	00138/05						
INPTC	00103/05	00088/05	00207/05	00215/05	00269/05			
INPTX	00096/02	00071/02						
INPX	00133/02	00125/02						
INPX0	00140/02	00129/02						
INPX1	00168/02	00155/02	00306/02	00319/02				
INPX2	00192/02	00141/02	00173/02					
INPX3	00223/02	00197/02						
INPX4	00230/02	00187/02						
INPX5	00204/02	00238/02	00286/02					

INPX6	00279/02	00233/02						
INPX7	00290/02	00143/02						
INPX8	00301/02	00145/02						
INPX9	00316/02	00147/02						
IOBT	00304/01 00249/06	00501/02	00127/03	00326/03	00008/04	00196/04	00189/06	
IUMTR	00004/01 00371/03	00266/02	00362/02	00449/02	00116/03	00238/03	00286/03	
IUNBT	00305/01	00210/02	00601/03					
ISBA1	00401/06	00490/06						
ISBB1	00504/06	00522/06						
ISUBA	00457/06	00227/06	00366/06	00488/06				
ISUBB	00501/06	00231/06	00520/06					
IWT	00193/04	00039/01	00073/04					
IWT1	00204/04	00198/04						
KAU	00315/04	00047/01						
KMASK	00148/01	00321/04						
KSN	00501/07	00510/07						
LBECR	00104/03	00099/03	00108/03	00112/03	00117/03	00165/03	00198/03	
LBEND	00111/01	00035/03	00137/03					
LBGIN	00110/01	00033/03	00121/03					
LBHED	00108/01	00029/03	00124/03	00547/03	00550/03	00565/03	00567/03	
LBPHI	00106/01 00245/03	00025/03	00048/03	00122/03	00135/03	00162/03	00240/03	
		00278/03	00543/03	00548/03	00568/03	00571/03	00026/04	
LBSAV	00109/01	00031/03	00125/03					
LBSIR	00107/01 00591/03	00027/03	00123/03	00545/03	00566/03	00569/03	00578/03	
		00593/03						
LC	00535/05	00027/05	00067/05	00419/05				
LCCNT	00105/01 00242/03	00023/03	00090/03	00105/03	00155/03	00163/03	00197/03	
		00247/03	00280/03	00541/03	00564/03			
LCMAR	00113/01	00047/03	00063/03	00070/03	00086/03	00154/03	00164/03	

00172/03 00577/03 00584/03
LDBT 00306/01 00687/04 00831/04
LDNBT 00307/01 00657/04 00805/04 00055/06
LDW1 00239/03 00234/03
LDWN 00227/03 00080/03 00083/03
LDWN1 00291/03 00283/03 00299/03 00302/03 00489/03
LDWN2 00301/03 00297/03
LDWNR 00271/03 00231/01
LDWR 00231/01 00391/00
LFDL2 00028/02 00624/02
LFDLY 00620/02 00423/02 00634/02
LFLAG 00097/01 00019/03 00450/03 00598/03 00019/04 00386/06 00418/06
LHXOR 00417/07 00141/07
LDUT1 00082/03 00078/03
LDUT2 00084/03 00081/03 00502/03 00505/03
LWXR 00084/01 00038/02 00051/02 00076/02 00113/02
LPBT 00265/03 00353/03
LPBT1 00102/01 00241/03 00265/03 00277/03 00025/04
LPBT2 00266/03 00243/03 00279/03
LPCR 00134/03 00046/03 00145/03 00158/03
LPCR 00149/03 00054/03
LPCR1 00155/03 00151/03
LPD 00033/04 00653/01
LPDIS 00100/01 00035/04 00185/04 00187/04 00383/06 00421/06
LPDJM 00653/01 00477/03 00507/03
LPDRF 00099/01 00529/02 00275/03 00020/04 00389/06 00420/06
LPECT 00092/03 00059/03 00069/03 00182/03
LPEND 00121/03 00098/03

LPERF	00098/01	00485/02	00249/03	00272/03	00276/03	00352/03	00021/04
	00024/04	00419/06					
LPIW	00232/01	00388/06					
LPIW1	00018/03	00232/01					
LPLF	00167/03	00056/03					
LPOUT	00074/03	00062/03	00085/03	00157/03	00161/03	00169/03	00173/03
	00300/03	00303/03	00488/03				
LPPNC	00041/03	00100/03					
LPR	00514/03	00652/01					
LPR1	00521/03	00517/03					
LPR2	00530/03	00487/03	00523/03				
LPR3	00539/03	00526/03	00534/03				
LPR4	00559/03	00553/03					
LPR5	00576/03	00594/03					
LPR6	00596/03	00590/03					
LPR7	00624/03	00563/03					
LPS	00041/04	00654/01					
LPSUP	00178/03	00050/03					
LPTTY	00094/01	00084/02	00274/02	00302/02	00309/02	00320/02	00468/02
	00020/03	00042/03	00093/03	00192/03	00195/03	00228/03	00257/03
	00273/03	00292/03	00394/03	00597/03	00011/04	00016/04	00184/04
	00415/06	00237/07	00278/07				
LPTYP	00093/01	00064/03	00076/03	00149/03	00167/03	00295/03	00478/03
	00521/03	00615/03	00043/04	00604/04			
LPXUF	00101/01	00052/03	00178/03	00181/03	00196/03		
LSTAT	00112/01	00037/03	00109/03	00111/03	00113/03	00126/03	00128/03
	00231/03	00233/03	00235/03	00287/03	00289/03		
LSYN1	00214/03	00207/03	00210/03				
LSYNC	00203/03	00258/03					
LTBT	00308/01	00305/04	00726/04	00853/04	00045/06		
LTLOB	00135/01	00721/04	00848/04	00126/06			
LTNBT	00309/01	00239/04					

MPXIE	00635/02	00444/07					
MPXIG	00007/02	00250/01	00024/02	00550/02	00428/07	00444/07	
MPXLC	00083/01	00013/02	00050/02				
MPXOP	00371/02	00066/02	00354/02				
MPXTE	00082/01	00248/02	00250/02	00251/02	00254/02		
MPXUC	00085/01	00015/02	00052/02				
MPY	00030/01	00031/01	00759/01	00763/01	00764/01	00765/01	00037/02
	00039/02	00570/02	00576/02	00307/06	00317/06	00318/06	00319/06
	00320/06	00324/06	00325/06	00326/06	00350/06	00045/07	00300/07
	00333/07	00341/07	00342/07	00343/07			
MPYA	00077/01	00033/02	00556/02	00568/02			
MPYB	00078/01	00034/02	00557/02	00569/02			
MPYE	00079/01	00036/02	00554/02	00566/02			
MPYIE	00636/02	00447/07					
MPYIO	00031/02	00251/01	00560/02	00572/02	00431/07	00447/07	
MTEMP	00167/01	00703/01	00723/01	00190/07			
MTPNT	00634/01	00629/01					
MUXCK	00375/07	00149/07	00156/07	00378/07	00379/07	00380/07	
MUXOR	00736/01	00665/01	00754/01	00766/01	00417/07		
MUXOY	00759/01	00/42/01					
MUXRE	00/67/01	00417/07					
MUXX	00050/02	00233/01	00576/02				
MUXXX	00233/01	00018/02					
MUXY	00054/02	00045/02					
NBT0	00205/01	00300/01					
NBT1	00206/01	00302/01					
NBT10	00215/01	00329/05					
NBT11	00216/01	00319/01	00325/05				
NBT12	00217/01	00222/01	00223/01	00124/04	00414/04	00321/05	
NBT13	00218/01	00509/06					

NBT15	00219/01	00326/01						
NBT2	00207/01	00352/01						
NBT3	00208/01	00305/01	00354/01	00184/05				
NBT4	00209/01	00307/01						
NBT5	00210/01	00309/01	00357/01					
NBT6	00211/01	00311/01	00359/01	00121/05	00139/05			
NBT7	00212/01	00313/01	00361/01					
NBT8	00213/01	00005/02	00479/02	00340/05				
NBT9	00214/01	00316/01	00333/05					
NCCC	00570/05	00126/05	00134/05	00237/05	00398/05			
NDUBT	00235/01	00522/02	00356/07					
PELHO	00223/01	00335/02	00404/03	00111/06				
NIBT	00315/01	00009/02	00331/02	00357/02	00398/03	00101/06	00360/07	
NIEBT	00234/01	00056/06						
NILI	00291/04	00287/04						
NINBT	00316/01	00511/02	00204/04					
NPRT	00428/06	00213/06	00226/06	00229/06	00263/06	00265/06	00298/06	
	00338/06	00210/07	00212/07	00250/07	00386/07			
NPURT	00168/01	00008/06	00218/06	00221/06	00224/06	00339/06	00345/06	
	00304/00							
NTEMP	00427/06	00277/06	00287/06	00291/06	00312/06	00323/06	00327/06	
NUC	00302/04	00646/01						
UCNV	00236/01	00470/02						
UCNVR	00315/05	00236/01	00406/05					
UINI1	00377/03	00328/03	00445/03	00455/03	00459/03			
UINT0	00415/03	00400/03						
UINI1	00419/03	00411/03						
UINI2	00425/03	00418/03						

OMTON	00/01/01	00664/01	00711/01			
OUTPUT	00327/02	00214/02	00234/02	00341/02	00344/02	
OUTPE	00613/03	00557/03	00609/03			
OWI	00347/04	00649/01				
OWTA	00359/04	00352/04				
PANIC	00056/01	00055/01				
PCHAR	00169/01	00331/03	00347/03			
PDBT	00314/01	00021/06	00139/06			
PEJCT	00149/01	00618/03				
PHA1	00170/01	00617/04	00669/04			
PHA2	00173/01	00769/04	00818/04			
PHB1	00171/01	00618/04	00670/04			
PHB2	00174/01	00770/04	00819/04			
PHE1	00172/01	00620/04	00667/04			
PHE2	00175/01	00772/04	00816/04			
PHK	00176/01	00106/04	00308/04	00729/04	00856/04	00368/06
PHS	00098/04	00618/01				
PHM1	00177/01	00622/04	00633/04	00663/04		
PHM2	00178/01	00774/04	00786/04	00812/04		
PLDHE	00141/01	00017/06				
PLTLL	00676/04	00682/04	00826/04			
PMPIXI	00250/01	00023/01	00483/07			
PMPIXF	00238/01	00351/05				
PMPIYI	00251/01	00032/01	00480/07			
POC	00323/03	00615/01	00454/07	00467/07		
POINI	00449/03	00395/03				
POW	00237/01	00005/01				
POW1	00003/07	00006/07	00396/07			

POW10 00144/07 00129/07 00139/07
POW11 00259/07 00290/07
POW12 00282/07 00273/07 00279/07
POW13 00305/07 00201/07 00299/07
POW14 00188/07 00098/07 00105/07
POW15 00152/07 00148/07
POW16 00162/07 00150/07 00155/07
POW17 00352/07 00231/07 00272/07 00362/07 00369/07 00370/07
POW2 00058/07 00021/07
POW3 00130/07 00127/07
POW30 00319/07 00219/07 00227/07 00233/07 00323/07
POW31 00325/07 00226/07 00230/07 00240/07 00330/07
POW32 00332/07 00260/07 00268/07 00274/07 00336/07
POW33 00338/07 00267/07 00271/07 00281/07 00344/07
POW4 00082/07 00101/07
POW5 00112/07 00086/07
POW6 00094/07 00122/07 00135/07 00143/07 00151/07 00157/07 00178/07
POW7 00218/07 00249/07
POW8 00241/07 00232/07 00238/07
POW9 00294/07 00253/07
POWA 00400/07 00025/07 00309/07
POWAT 00397/07 00010/07 00024/07
POWB 00401/07 00027/07 00308/07
POWB1 00398/07 00011/07 00026/07
POWCL 00173/07 00171/07
POWD1 00396/07 00019/07
POWE 00402/07 00023/07 00306/07

POWF1	00049/07	00044/07					
POWF2	00103/07	00096/07					
POWF3	00099/07	00106/07					
POWFF	00399/07	00015/07	00064/07	00069/07			
POWFL	00404/07	00193/07					
POWI	00406/07	00074/07	00090/07	00094/07	00100/07	00117/07	00145/07
	00164/07	00165/07	00175/07	00176/07			
POWJ	00407/07	00072/07	00113/07	00177/07			
POWND	00314/07	00056/07					
POWP	00403/07	00029/07	00315/07	00424/07			
POWST	00169/07	00167/07					
POWSV	00405/07	00119/07	00132/07	00140/07			
POWTB	00419/07	00112/07	00116/07				
PRFS	00249/01	00014/01	00480/07				
PRISC	00092/01	00475/03	00515/03	00050/04			
PSC	00464/03	00651/01					
PSC.	00509/03	00480/03					
PSC1	00524/03	00483/03	00486/03				
PSC2	00620/03	00490/03	00493/03	00617/03			
PSC3	00621/03	00496/03	00499/03				
PSC4	00087/03	00494/03					
PSC5	00088/03	00500/03					
PINUM	00179/01	00323/03	00332/03	00351/03	00369/03	00405/03	00407/03
	00426/03	00438/03	00443/03	00457/03			
PWFLG	00408/07	00050/07	00082/07	00084/07			
RBP	00157/04	00021/01					
RCODE	00180/01	00600/01	00605/01	00627/01	00719/01	00329/03	00466/03
	00002/04	00099/04	00113/04	00398/04	00435/04	00590/04	00210/06
RFS	00594/01	00249/01	00677/01	00425/07	00441/07		

RFSE	00678/01	00441/01							
RLP	00704/01	00117/01	00724/01						
RNBT	00312/01	00212/02	00507/02	00170/04					
RNNBT	00313/01	00180/04	00229/04						
RPINT	00429/06	00474/06							
RVRSL	00132/01	00200/02							
SBP	00147/04	00620/01							
SCK01	00056/05	00019/05	00053/05						
SCK02	00091/05	00082/05							
SCK03	00071/05	00047/05							
SCK10	00275/05	00070/05							
SCK11	00300/05	00025/05	00055/05	00073/05					
SCK12	00296/05	00030/05	00066/05						
SCK13	00305/05	00028/05	00068/05						
SCK14	00298/05	00127/05	00223/05	00233/05	00238/05	00251/05	00307/05		
SCK15	00285/05	00280/05							
SCK21	00202/05	00077/05							
SCK32	00266/05	00244/05	00248/05	00260/05					
SCK71	00217/05	00085/05	00210/05						
SCK72	00225/05	00220/05							
SCK73	00235/05	00229/05	00256/05						
SCK74	00231/05	00262/05							
SCK81	00241/05	00094/05	00212/05						
SCK91	00253/05	00087/05	00214/05						
SCMSK	00155/01	00158/01	00484/03	00491/03	00497/03	00503/03			
SEL01	00452/05	00446/05							
SEL02	00463/05	00442/05							
SEL03	00435/05	00358/05	00364/05	00362/05	00364/05	00366/05	00368/05		
	00370/05	00378/05							

SEL04	00472/05	00372/05					
SEL05	00486/05	00374/05					
SEL07	00379/05	00376/05	00438/05	00467/05	00475/05	00479/05	00489/05
	00496/05						
SEL08	00395/05	00412/05					
SEL09	00410/05	00385/05					
SEL10	00354/05	00319/05					
SEL11	00424/05	00387/05	00447/05				
SEL12	00403/05	00420/05	00429/05	00460/05			
SEL20	00339/05	00335/05					
SEL21	00345/05	00324/05	00328/05	00332/05			
SEL22	00348/05	00338/05	00343/05				
SELN1	00048/05	00011/05					
SELN2	00026/05	00023/05					
SELN3	00040/05	00032/05	00035/05				
SELN4	00045/05	00039/05					
SELPR	00466/02	00414/02	00472/02				
SERN0	00578/04	00467/07					
SINIT	00715/01	00/06/01					
SLBIT	00224/01	00218/02	00457/02	00217/03	00442/03	00367/07	
SLC0V	00511/05	00381/05	00521/05				
SLP11	00478/02	00469/02					
SPACE	00571/05	00347/05					
SPE	00112/04	00619/01					
SPINT	00430/06	00477/06					
SRR1N	00670/01	00663/01	00360/03	00372/03	00519/03	00529/03	00537/03
	00522/03	00625/03	00013/04	00023/04	00027/04	00036/04	00052/04
	00094/04	00107/04	00142/04	00152/04	00162/04	00172/04	00188/04
	00202/04	00211/04	00231/04	00244/04	00247/04	00257/04	00267/04
	00277/04	00289/04	00297/04	00310/04	00323/04	00337/04	00342/04
	00357/04	00363/04	00376/04	00390/04	00424/04	00434/04	00476/04

00556/04 00568/04 00577/04 00602/04 00608/04
 STBI 00301/01 00232/03 00367/03 00361/04
 STC0 00409/07 00166/07
 STE 00050/04 00016/01
 STEMP 00101/01 00573/03 00588/03 00065/04 00067/04 00080/04 00091/04
 00102/04 00104/04 00115/04 00126/04 00133/04 00137/04 00140/04
 00401/04 00413/04 00415/04 00422/04 00439/04 00444/04 00462/04
 00464/04 00472/04 00235/06 00257/06 00269/06 00296/06 00305/06
 00332/06 00458/06 00487/06
 STFM 00170/07 00055/07
 STNBT 00302/01 00443/02 00110/03 00288/03
 STP 00430/04 00057/01
 STP1 00454/04 00459/04
 STP2 00460/04 00457/04
 STUP 00635/01 00722/01
 SYBIT 00225/01 00040/02
 SYNCC 00120/01 00215/02 00454/02 00214/03 00437/03 00363/07
 SYNCR 00572/05 00337/05
 TBASE 00017/01 00018/01 00163/06 00341/06 00342/06 00036/07 00076/07
 00198/07
 TBG1 00012/06 00154/06
 TBG10 00169/06 00068/06 00077/06 00146/06 00182/06
 TBG11 00188/06 00058/06 00140/06 00204/06
 TBG12 00094/06 00090/06
 TBG13 00091/06 00097/06
 TBG14 00039/06 00128/06
 TBG15 00133/06 00047/06
 TBG16 00158/06 00151/06
 TBG2 00062/06 00023/06
 TBG3 00034/06 00028/06
 TBG4 00086/06 00027/06

TBG5	00029/06	00093/06						
TBG6	00148/06	00019/06	00033/06	00042/06	00059/06	00084/06	00117/06	
	00129/06							
TBG7	00119/06	00038/06						
TBG9	00131/06	00123/06						
TBGA	00182/01	00004/06	00161/06					
TBGB	00183/01	00005/06	00162/06					
TBGCN	00185/01	00010/06	00149/06					
TBGDR	00239/01	00019/01	00482/07					
TBGE	00184/01	00007/06	00159/06					
TBGED	00205/06	00443/07	00469/07					
TBGEN	00003/00	00239/01	00164/06	00427/07	00443/07	00456/07	00469/07	
TEMP1	00186/01	00119/04	00121/04	00127/04	00129/04	00139/04	00403/04	
	00407/04	00408/04	00410/04	00418/04	00419/04	00420/04	00423/04	
	00449/04	00465/04	00463/06	00480/06	00485/06	00506/06	00512/06	
	00517/06							
TKU	00589/04	00661/01						
TKU.1	00240/01	00506/03						
TKU.2	00241/01	00495/03						
TKU.3	00242/01	00501/03						
TKU1	00598/04	00240/01	00606/04	00611/04				
TKU2	00600/04	00241/01						
TKU3	00601/04	00242/01						
TKU4	00604/04	00595/04	00597/04					
ILPR	00096/01	00307/02	00317/02	00322/02	00018/04	00417/06		
ILSUP	00095/01	00271/02	00276/02	00304/02	00310/02	00193/03	00555/03	
	00017/04	00186/04	00416/06					
TMASK	00151/01	00720/01						
TPBT	00299/01	00195/02	00231/02	00275/04				
TPNBT	00300/01	00293/04						

TPU	00272/04	00044/01					
TPUNT	00187/01	00015/06	00054/06	00092/06	00098/06	00174/06	
TRINI	00142/01	00063/02	00412/03	00317/05	00107/06		
ITCC	00244/01	00236/06					
ITPI	00515/07	00245/01					
ITRP	00416/07	00270/06	00217/07				
ITY	00243/01	00011/06					
ITY03	00391/01	00243/01	00244/01	00153/06	00256/06	00295/06	00331/06
	00489/06	00521/06	00247/07	00288/07	00416/07	00516/07	
ITY01	00397/01	00153/06	00256/06	00295/06	00331/06	00489/06	00521/06
	00247/07	00288/07	00517/07				
ITY02	00403/01	00518/07					
ITY03	00409/01	00519/07					
ITY04	00415/01	00520/07					
ITY05	00421/01	00521/07					
ITY06	00427/01	00522/07					
ITY07	00433/01	00523/07					
ITY10	00439/01	00524/07					
ITY11	00445/01	00525/07					
ITY12	00451/01	00526/07					
ITY13	00457/01	00527/07					
ITY14	00463/01	00528/07					
ITY15	00469/01	00529/07					
ITY16	00475/01	00530/07					
ITY17	00481/01	00531/07					
ITY20	00487/01	00532/07					
ITY21	00493/01	00533/07					
ITY22	00499/01	00534/07					
ITY23	00505/01	00535/07					

TTY24	00511/01	00536/07					
TTY25	00517/01	00537/07					
TTY26	00523/01	00538/07					
TTY27	00529/01	00539/07					
TTY30	00535/01	00540/07					
TTY31	00541/01	00541/07					
TTY32	00547/01	00542/07					
TTY33	00553/01	00543/07					
TTY34	00559/01	00544/07					
TTY35	00565/01	00545/07					
TTY36	00571/01	00546/07					
TTY37	00577/01	00547/07					
TTYN	00168/01	00013/06	00051/06	00069/06	00078/06	00081/06	00112/06
	00114/06	00152/06	00170/06				
TTYTP	00245/01	00003/01	00057/02	00626/04	00778/04	00459/06	00502/06
UC	00534/05	00029/05	00065/05	00173/05	00428/05		
UCB1	00351/01	00080/05	00109/05	00203/05	00297/05	00383/05	00426/05
	00444/05						
UCDCC	00569/05	00276/05					
UCNBT	00352/01	00086/02	00306/05	00417/05			
UHU	00696/01	00052/06					
UIR	00167/04	00637/01					
ULU	00236/04	00641/01					
UNDL1	00544/05	00086/05	00545/05				
UNDL2	00531/05	00213/05					
UNR	00177/04	00638/01					
UPPER	00086/01	00041/02	00053/02	00060/02	00064/02	00352/02	
VTEMP	00413/07	00222/07	00228/07	00235/07	00242/07	00263/07	00269/07
	00276/07	00283/07	00353/07				

WSP	00551/04	00658/01					
WTP	00573/04	00660/01					
XATIM	00069/01	00112/02	00244/02				
XBEND	00067/01	00108/02	00170/02	00384/02	00400/02		
XBGIN	00066/01	00106/02	00293/02	00382/02	00495/02	00017/05	
XBHED	00064/01	00102/02	00282/02	00378/02	00498/02		
XBIT	00358/01	00144/05	00278/05				
XBPNT	00062/01	00098/02	00168/02	00174/02	00175/02	00193/02	00280/02
	00290/02	00296/02	00374/02	00398/02	00429/02	00496/02	00016/05
XBSAV	00065/01	00104/02	00172/02	00380/02	00499/02		
XBSTR	00063/01	00100/02	00192/02	00198/02	00279/02	00281/02	00291/02
	00376/02	00497/02					
XCLNT	00061/01	00372/02	00394/02	00430/02	00434/02		
XCHAR	00060/01	00120/02	00164/02	00181/02	00185/02	00411/02	00419/02
	00009/05	00015/05	00268/05	00356/05	00495/05		
XCUNT	00573/05	00137/05					
XDCNT	00071/01	00390/02	00403/02	00460/02	00590/02	00613/02	00629/02
XFLAG	00087/01	00019/02	00541/02	00553/02	00562/02		
XNB1T	00359/01	00074/05	00287/05				
XOBT	00318/01	00123/02	00161/02				
XUNBT	00319/01	00181/04					
XSCNT	00072/01	00392/02	00433/02	00592/02	00597/02	00599/02	00600/02
	00603/02	00615/02	00631/02				
XSTAT	00068/01	00110/02	00122/02	00126/02	00133/02	00135/02	00156/02
	00160/02	00162/02	00194/02	00209/02	00211/02	00223/02	00225/02
	00230/02	00235/02	00242/02	00243/02	00386/02	00442/02	00444/02
	00440/02	00500/02	00502/02	00504/02	00510/02	00512/02	00290/05
	00292/05						
XTNUM	00060/01	00059/02	00205/02	00219/02	00265/02	00270/02	00301/02
	00316/02	00328/02	00336/02	00360/02	00416/02	00447/02	00458/02
	00467/02	00473/02	00486/02	00513/02	00516/02	00525/02	00587/02
	00625/02	00010/04	00349/05				
XTPNT	00061/01	00402/02	00428/02				