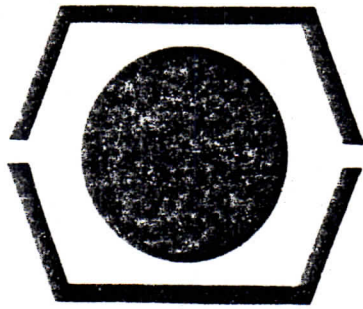




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TITLE	LABORATORY AND DISPLAY INSTRUCTIONS FOR OS/8 BASIC
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/SOURCE PROGRAM BASIC.UF

PAL8-V98 07/10/74 PAGE 1

/SOURCE PROGRAM BASIC.UF
/OVERLAY FOR 'UF.8E', VERSION 26
/DEC-8E-ALOSA-A-LA
/RONALD JONES D. D., PH. D.
/THE OHIO STATE UNIVERSITY
/COLLEGE OF OPTOMETRY
/COLUMBUS, OHIO 43210
/

4000 FPP=4000
6000 FADD=FPP+2000
6117 FSUB=FPP+2117
6130 FFNEG=FPP+2130
5600 FMPY=FPP+1600
5722 FDIY=FPP+1722
6254 FFPUT=FPP+2254
6237 FFGET=FPP+2237
6213 FFNOR=FPP+2213
5412 FFDIVI=5412
0365 FACCKR=0365
1615 UNSFIX=1615
1230 PSWAP=1230
0307 ARGPRE=0307
6052 DISD=6052
6053 DILX=6053
6054 DILY=6054
6055 DIXY=6055
6130 CLZE=6130
6131 CLSK=6131
6132 CLOE=6132
6133 CLAB=6133
6135 CLSA=6135
6530 ADCL=6530
6531 ADLM=6531
6532 ADST=6532
6533 ADRB=6533
6534 ADSE=6534
6536 ADLE=6536
6537 ADRS=6537
0044 EXP=44
0045 HORD=45
0046 LORD=46
0010 MAXPTS=>R0
0011 REFRFL=>R1
0012 BUFADR=>R2
0013 DX=XR3
6040 SPF=6040
6007 CAF=6007
1465 IA=1465

EJECT
0006 USECON=0006
0010 XR0=10
0011 XR1=11
0012 XR2=12
0013 XR3=13
0014 XR4=14
0015 XR5=15
0020 CDFIO=0020
0022 ARSTRT=0022
0064 INSAV=0064
0073 K0010=0073
0074 K0017=0074
0077 K0200=0077
0114 FIXP=0114
0134 FGETL=0134
0135 FPUTL=0135
0136 FNORL=0136
0137 FCLR=0137
0140 FNEGL=0140
0156 PISWAP=0156
4163 GETARG=4163
0037 FF=0037
6506 DBSO=6506
6505 DBCO=6505
4072 CSAM=4072
4074 PSAM=4074
4073 NSAM=4073
4144 DONE=4144
4077 NCTR=4077
4154 S=4154
4075 PCTR=4075
4160 FL4096=4160

EJECT
/PATCHES TO 'UF.8E'

	4173	*4173	
04173	4245		9RESET
	4174	*4174	
04174	4520		0RESET
	4175	*4175	
04175	3425		1NI
	4177	*4177	
04177	4502		ARG123

EJECT
/BRTS. SV PATCHES

/THESE ARE THE STARTING ADDRESSES OF THE ROUTINES
/THEY SHOULD BE PATCHED INTO BRTS. SV STARTING AT 1560

/PLT(N, X, Y) 3600
/REF(N, X, Y) 4310
/ADC(N) 3531
/CLK(R, O, S) 4100
/CLW(N) 3551
/DRO(T, M) 3400
/DRI(N) 4302
/SAM(C, N, P, T) 4000
/DAC(M, N) 3453
/GET(M, L) 4400
/PUT(M, L) 4431
/INI(N) 3425
/PLY(Y) 3510

/ALSO PATCH BRTS. SV 0001=5402 0002=4456

/DRO(T,M) FL PT NUMBER TO OUTPUT REG 0<=M<=4095
/ T=1, LOGICAL 1'S ARE LOW; T=0, LOGICAL 1'S ARE HI

	3400	*3400		
03400	0000	DRO,	0	
03401	4514		JMS I FIXP	/GET T AND FIX IT
03402	3253		DCA DAC	/TEMP SAVE
03403	1253		TAD DAC	
03404	1224		TAD P6505	
03405	3212		DCA DROIOT	/PUT IOT ON LINE
03406	4777		JMS GETARG	
03407	4514		JMS I FIXP	/M
03410	7450		SNA	/IS M=0?
03411	5215		JMP DRO1	/YES, CLEAR REG
03412	0000	DROIOT,	0	
03413	7300		CLA CLL	
03414	5600		JMP I DRO	
03415	7040	DRO1,	CMA	/-1
03416	1253		TAD DAC	
03417	7041		CIA	
03420	1224		TAD P6505	
03421	3212		DCA DROIOT	
03422	7040		CMA	
03423	5212		JMP DROIOT	/CLEAR REG
03424	6505	P6505,	6505	

EJECT
/INI INITIALIZE ROUTINE

03425	0000	INI,	0	
03426	1006		TAD USECON	/ENTRY POINT OF BUF
03427	7106		CLL RTL	
03430	1022		TAD ARSTRT	/ADR-1
03431	3015		DCA XRS	
03432	1020		TAD CDFIO	
03433	3234		DCA . +1	
03434	0000	BUFBK,	0	
03435	7040		CMA	
03436	1415		TAD I XRS	
03437	3234		DCA BUFBK	
03440	1415		TAD I XRS	
03441	3275		DCA PUTCDF	
03442	1275		TAD PUTCDF	
03443	3252		DCA CDFBAK	
03444	6201		CDF	
03445	1234		TAD BUFBK	
03446	3012		DCA BUFADR	
03447	1006		TAD USECON	/ENTRY POINT OF BUF
03450	3776		DCA MEM	/SAVE
03451	5625		JMP I INI	
03452	0000	CDFBAK,	0	

EJECT

/DAC(N,M) LOAD DAC #N WHERE 0<=N<=5 WITH FLOATING
/ POINT NUMBER M, WHERE 0<=M<4096

03453	0000	DAC,		
03454	4514		MS I FIXP	/FIX N
03455	3200		CA DRO	
03456	1200		AD DRO	
03457	1273		AD KM6	/CHK FOR LEGAL VALUE
03460	7700		MA CLA	/5 OR LESS?
03461	5775		MP IA	/NO
03462	1200		AD DRO	
03463	1272		AD ADAC	/MAKE IOT
03464	3267		CA .+3	
03465	4777		MS GETARG	
03466	4514		MS I FIXP	/FIX M
03467	0000			
03470	7300		LA CLL	
03471	5653		MP I DAC	
03472	6551	ADAC,	6551	
03473	7772	KM6,	6	

EJECT

/BUTBUF ENTER WITH 12 BIT VAL IN AC PUT VAL IN USER BUF;
/ CHK TO SEE IF FIELD IS CROSSED.

03474	0000	PUTBUF, 0	
03475	0000	PUTCDF, 0	
03476	3412	DCA I BUFADR	
03477	7001	IAC	
03500	1012	TAD BUFADR	
03501	7640	SZA CLA	/ABOUT TO CROSS FIELDS?
03502	5306	JMP +4	/NO
03503	1073	TAD K0010	/YES
03504	1275	TAD PUTCDF	
03505	3275	DCA PUTCDF	
03506	6201	CDF	
03507	5674	JMP I PUTBUF	

EJECT

/PLY(Y) ENTER WITH YVAL IN FAC; CHK 0<=VAL<1.0
/ PUT LEGAL VAL IN USER BUF.
/

03510 0000 PLY, 0
03511 4314 JMS JOB
03512 4274 JMS PUTBUF
03513 5710 JMP I PLY

03514 0000 JOB, 0
03515 1045 TAD HORD
03516 7710 SPA CLA />=0?
03517 5775' JMP IA /NO. ERROR
03520 1044 TAD EXP
03521 7740 SMA SZA CLA /<1.0?
03522 5775' JMP IA

/CONVERT NUMBER TO A 10 BIT DISPLAYABLE VAL
/ FAC=FAC*1776+1001
/

03523 4774' JMS FMPY
03524 3762 FL1022
03525 4773' JMS FADD
03526 4557 FL513
03527 4514 JMS I FIXP
03530 5714 JMP I JOB

EJECT

/ADC(N) SAMPLE ADC #N; RETURN LEGAL VAL TO FAC

03531	0000	ADC,	0	
03532	4514		JMS I FIXP	/GET ARG
03533	7041		CIA	
03534	1074		TAD K0017	
03535	7510		SPA	/NC=17?
03536	5775		JMP IA	/ NO
03537	7041		CIA	
03540	1074		TAD K0017	
03541	6531		ADLM	
03542	6532		ADST	
03543	6534		ADSK	
03544	5343		JMP -1	
03545	6533		ADRB	
03546	3045		DCA HORD	
03547	4772		JMS FFLOT	
03550	5731		JMP I ADC	

EJECT
/CLW(N)
/
/
CLW,

N IS A DUMMY ARG; WAIT TILL CLOCK O.F. OR SCHMIT
TRIGGER (DEPENDING ON CLK) THEN RETURN TO BASIC.

03551 0000

3

03552 6131

CLSK

/STATUS SET?

03553 7410

SKP

03554 5367

IMP EARLY

/YES

03555 6131

CLSK

03556 5355

IMP -1

03557 6135

PVAL,

CLSA

/READ STATUS

03560 7104

CLW1,

CLL RAL

/CHK ON O.F.

03561 7430

SZL

/O.F. BIT SET IN STATUS WD?

03562 7041

CIA

/YES, NEGATE

/RTN CODES

03563 7010

RAR

03564 3045

DCA HORD

03565 4772

TMS FFLOT

03566 5751

IMP I CLW

03567 6135

EARLY,

CLSA

03570 1073

TAD K0010

03571 5360

IMP CLW1

03572 4200

03573 6000

03574 5600

03575 1465

03576 3765

03577 4163

3600 PAGE

/PLT(N,X,Y) ROUTINE TO PLOT X,Y ARGS IF N=0.

/ IF 0<N<=1024 THE USER ARRAY IS
/ CONVERTED TO 10BIT DISPLAYABLE
/ VALS THEN PLOTTED.
/

	3600	*3600		
03600	0000	PLT,	0	
03601	4514	JMS I FIXP	/FIX N	
03602	7450	SNA		
03603	5344	JMP PLOT	/PLOT ARGS IF N=0	
03604	7041	CIA		
03605	3241	DCA CNTR		
03606	3342	DCA VTRX		
03607	3343	DCA VTRY		
03610	1365	TAD MEM		
03611	7041	CIA		
03612	1006	TAD USECON		
03613	7650	SNA CLA	/ARRAY CHANGED?	
03614	5253	JMP APLT	/NO, NOW 10 BIT!	
03615	4777	JMS INI	/INITIALIZE ARRAY	
03616	1020	TAD CDFIO		
03617	3220	DCA +1		
03620	0000	ADDR,	0	/USED TO ADVANTAGE
03621	1415	TAD I XR5	/BUMP	
03622	7300	CLA CLL		
03623	1415	TAD I XR5	/DIMENSION 2	
03624	6201	CDF		
03625	1241	TAD CNTR	/DIMENSION - N	
03626	7710	SPA CLA	/IS DIMENSION>=N?	
03627	5776	JMP IA	/NO, ABORT	
03630	1241	TAD CNTR		
03631	7104	RAL CLL	/MULT BY 2	
03632	3256	DCA CONT	/SAVE COUNTER FOR REP	
03633	4322	JMS INIT		

/GET INITIAL ADDR AND CDF OF ARRAY

03634	0000	REP,	0	/INIT RETURNS CDF HERE
03635	7001	IAC		
03636	3037	DCA FF		
03637	1220	TAD ADDR		
03640	4534	JMS I FGETL	/GET DATA IN FAC, SET CDF	
03641	0000	CNTR,	0	/NOT USED BY FGET

/PLY IS USED TO CREATE A 10 BIT ARRAY AND CHK VALUES.

03642	3037	DCA FF	/MODE L CALL
03643	4775	JMS PLY	
03644	7325	CLA CLL CML IAC RAL	/3
03645	1220	TAD ADDR	
03646	3220	DCA ADDR	
03647	7430	SZL	/FIELD CROSSED?
03650	4335	JMS BPLT	/YES
03651	2256	ISZ CONT	
03652	5234	JMP REP	

/DISPLAY ROUTINE

03653	6135	APLT,	CLSA	
03654	6032		KCC	
03655	4322		JMS INIT	
03656	0000	CONT,	0	
03657	1620		TAD I ADDR	
03660	1342		TAD VTRX	/VECTOR DISPLAY
03661	6053		DILX	
03662	7300		CLA CLL	
03663	2220		ISZ ADDR	
03664	5271		JMP DPLT	
03665	4335		JMS BPLT	
03666	1256		TAD CONT	
03667	3270		DCA +1	
03670	0000		0	
03671	1620	DPLT,	TAD I ADDR	/GET Y
03672	1343		TAD VTRY	
03673	6201		CDF	
03674	6054		DILY	
03675	6052		DISD	
03676	5275		JMP -1	
03677	6055		DIXY	
03700	7300		CLA CLL	
03701	2220		ISZ ADDR	
03702	7410		SKP	
03703	4335		JMS BPLT	
03704	2234		ISZ REP	
03705	5256		JMP CONT	/ARRAY NOT FINISHED
03706	6031		KSF	/FINISHED
03707	5315		JMP CPLT	
03710	1073		TAD K0010	
03711	3045		DCA HORD	
03712	4774		JMS FFLOT	/KEYBOARD INTERRUPT RETURNS 8 TO BAS
IC				
03713	6032	RTN,	KCC	/PLOT RETURNS HERE
03714	5600		JMP I PLT	/EXIT
03715	6131	CPLT,	CLSK	
03716	5255		JMP APLT+2	/CONTINUE IF NO CLOCK INTERRUPT
03717	1200		TAD PLT	/RETURN LOC
03720	3773		DCA CLW	/STORE IN CLW FUNCTION
03721	5772		JMP PYAL	/JUMP TO CLW, RETURN TO BASIC
/SUBROUTINES				

03722	0000	INIT,	0	
03723	1241		TAD CNTR	
03724	3234		DCA REP	/USED FOR VARIABLE COUNTER
03725	1771		TAD CDFBAK	
03726	3722		DCA I INIT	/PUT ON LINE
03727	1770		TAD BUFBK	/ADDR-1
03730	3220		DCA ADDR	
03731	2220		ISZ ADDR	
03732	7410		SKP	
03733	4335		JMS BPLT	/FIELD CROSSED
03734	5722		JMP I INIT	
03735	0000	BPLT,	0	
03736	1722		TAD I INIT	
03737	1073		TAD K0010	

```
03740 3722          DCA I INIT
03741 5735          JMP I BPLT
03742 0000 VTRX,    0
03743 0000 VTRY,    0
          /PLOT ARGS X,Y
          /
03744 4767' PLOT,    JMS GETARG      /GET X
03745 4766'          JMS JOB          /CHK, SCALE, AND FIX X
03746 6053          DILX
03747 7301          CLA CLL IAC
03750 4767'          JMS GETARG      /GET Y
03751 4766'          JMS JOB
03752 6054          DILY
03753 6052          DISD
03754 5353          JMP . -1
03755 6055          DIXY
03756 5313          JMP RTN          /EXIT
03757 0013 FL1024, 13
03760 2000          2000
03761 0000          0
03762 0012 FL1022, 12
03763 3774          3774
03764 0000          0
03765 7700 MEM,     -100            /DUMMY LOAD
03766 3514
03767 4163
03770 3434
03771 3452
03772 3557
03773 3551
03774 4200
03775 3510
03776 1465
03777 3425
          4000 PAGE
```

/FFLOT FLOAT ANY INTERGER IN WORD INTO FAC

	4200	*4200		
04200	0000	FFLOT,	0	
04201	3046		DCA LORD	/CLEAR LOW ORDER MANTISSA
04202	1206		TID P13	/11 INTO EXPONENT
04203	3044		DCA EXP	
04204	4536		JHS I FNORL	/NORMALIZE
04205	5600		JHP I FFLOT	
04206	0013	P13,	13	

EJECT

/ADSAM A CLOCK INTERRUPT FOR SAMPLING ADC'S

/

4337 SCNTR=NEGCHK

04207	6537	ADSAM1,	ADRS	/READ STATUS (GET MUX)
04210	7001		IAC	
04211	6531		ADLM	/BUMP MUX BY 1
04212	5230		JMP ADSAM2-1	
04213	6135	ADSAM,	CLSA	/RD STAT AND CLEAR
04214	7700		CLA SMA	/SCHMITT TRIG?
04215	5230		JMP ADSAM2-1	/YES
04216	1777'		TAD S	
04217	7650		SNA CLA	/S=0?
04220	5231		JMP ADSAM2	/YES, SET UP FOR O.F. SAMPLING
04221	2337		ISZ SCNTR	/CONTINUE UNTIL
04222	5256		JMP TION	/S NUMBER OF O.F.'S
04223	1776'	RCLK,	TAD PCTR	
04224	1775'		TAD PSAM	
04225	3045		DCA HORD	
04226	4200		JMS FFLOT	/RETURN NUMBER OF POINTS TO BASIC
04227	5774'		JMP DONE	/DONE IN CLK ROUTINE
04230	6532		ADST	
04231	6534	ADSAM2,	ADSK	/SCHMITT TRIGS DON'T START CONV!
04232	5231		JMP .-1	
04233	6533		ADRB	
04234	4773'		JMS PUTBUF	
04235	2772'		ISZ NCTR	/ALL SAMPLE?
04236	5207		JMP ADSAM1	/NO
04237	2776'		ISZ PCTR	/YES, JOB DONE?
04240	7410		SKP	
04241	5223		JMP RCLK	/JOB DONE, EXIT
04242	1771'		TAD CNTR	
04243	1302		TAD DRI	
04244	3771'		DCA CNTR	/UPDATE COUNTER IN PLT
04245	1770'	SRESET,	TAD NSAM	
04246	7041		CIA	
04247	3772'		DCA NCTR	/ADC SAMPLE COUNT
04250	1767'		TAD CSAM	
04251	6531		ADLM	/LOAD 1ST ADC
04252	1775'		TAD PSAM	
04253	1776'		TAD PCTR	
04254	7650		SNA CLA	/FIRST TIME THRU LOOP?
04255	5260		JMP .+3	/YES, INIT
04256	6001	TION,	ION	/NO, PLT
04257	5766'		JMP APLT+2	
04260	1770'		TAD NSAM	
04261	7110		RAR CLL	
04262	7430		SZL	/ODD NUMBER?
04263	5300		JMP IAA	/YES, ABORT
04264	7041		CIA	
04265	3302		DCA DRI	/TEMP STORE
04266	4765'		JMS INI	
04267	3771'		DCA CNTR	
04270	1777'		TAD S	
04271	7450		SNA	/IS S SET?

/SOURCE PROGRAM BAS.C. UF

PAL8-Y98 07/10/74 PAGE 4-2

04272	5276		JMP ADSAM4	/NO, INIT FOR O.F. SAMPLING
04273	7041		CIA	/YES, DISABLE O.F. ENABLE OF ADC
04274	3337		DCA SCNTR	
04275	6536		ADLE	
04276	6001	ADSAM4,	ION	
04277	5231		JMP ADSAM2	/IDLE UNTIL FIRST INTERRUPT
04300	6040	IAA,	SPF	
04301	5764		JMP IA	

EJECT

/DRI(N) N=DUMMY, SAMPLE DIGITAL I/O BOARD 0; AND RETURN RES

ULT

/ AS FL PT NUMBER IN FAC

04302	0000	DRI,	0	
04303	1307		TAD P6503	
04304	4763		JMS DIGIO	/GET DIGITAL VAL
04305	4337		JMS NEGCHK	
04306	5702		JMP I DRI	
04307	6503	P6503,	6503	

EJECT

/REF(N,X,Y) ROUTINE TO REFRESH AND VECTOR 10BIT ARRAY.

04310	0000	REF,	
04311	1310		AD REF
04312	3762'		ACA PLT
04313	4514		IMS I FIXP
04314	7041		CIA
04315	3771'		ACA CNTR
04316	4761'		IMS GETARG
04317	4760'		IMS FADD
04320	3757		PL1024
04321	4514		IMS I FIXP
04322	3757'		ACA VTRX
04323	7001		CAC
04324	4761'		IMS GETARG
04325	4760'		IMS FADD
04326	3757		PL1024
04327	4514		IMS I FIXP
04330	3756'		ACA VTRY
04331	1755'		AD MEM
04332	7041		CIA
04333	1006		AD USECON
04334	7640		SZA CLA
04335	4765'		IMS INI
04336	5754'		IMP APLT

/SET UP EXIT LINK FROM PLT
/FIX N
/RESET COUNTER IN PLT
/ADD 2000(8) TO VAL
/FIX X
/INSERT IN PLT ROUTINE
/FIX Y
/HAS 'USE' BEEN CALLED?
/YES, RESET POINTERS

EJECT

/NEGCHK THIS ROUTINE CHKS TO SEE IF A VALUE
/ FROM DRI OR GET IS NEG. IF IT IS
/ THE VALUE IS CHANGED TO 4096 +
/ NEG VALUE.
/

04337	0000	NEGCHK, 0	
04340	3310	DCA REF	/TEMP STORE
04341	1310	TAD REF	
04342	3045	DCA HORD	
04343	4200	JMS FFL0T	
04344	1310	TAD REF	
04345	7700	SMA CLA	/VAL WAS NEG
04346	5737	JMP I NEGCHK	/NO
04347	4760	JMS FADD	/YES
04350	4160	FL4096	
04351	5737	JMP I NEGCHK	
04354	3653		
04355	3765		
04356	3743		
04357	3742		
04360	6000		
04361	4163		
04362	3600		
04363	4546		
04364	1465		
04365	3425		
04366	3655		
04367	4072		
04370	4073		
04371	3641		
04372	4077		
04373	3474		
04374	4144		
04375	4074		
04376	4075		
04377	4154		
	4400	PAGE	

```

/GET(M,L) M=0 GET VAL FROM USER BUF , NO MASKING
/      M>0, GET VAL FROM USER BUF AND MASK WHERE
/      M IS THE MASKING VAL.
/      L IS THE LOCATION OF USER BUF .
/      COMMON CALLS INI ROUTINE.
/

```

```

4502      L4OLD=ARG123
4546      MASK=DIGIO

```

```

04400 0000 GET, 0
04401 7001      IAC
04402 3301      DCA MSKCTR
04403 4514      JMS I FIXP      /GET M
04404 7450      SNA              /M=0?
04405 7040      CMA              /YES SET M=7777.
04406 7110      CLL RAR
04407 7430      SZL
04410 5213      JMP .+3
04411 2301      ISZ MSKCTR
04412 5206      JMP .-4
04413 7004      RAL
04414 4240      JMS COMMON      /SAME CODE FOR GET AND PUT
04415 1301      TAD MSKCTR
04416 7041      CIA
04417 3301      DCA MSKCTR
04420 1702      TAD I LHOLD
04421 6201      CDF              /RESET DF
04422 7110      CLL RAR
04423 2301      ISZ MSKCTR
04424 5222      JMP .-2
04425 7004      RAL
04426 0346      AND MASK
04427 4777'     JMS NEGCHK
04430 5600      JMP I GET

```

```

/PUT(M,L)      M IS THE FL PT VAL TO BE FIXED AN PUT
/              IN THE USER BUF; LIS THE LOC OF THE USER BUF
/              INI IS CALLED BY COMMON.
/

```

```

04431 0000 PUT, 0
04432 4514      JMS I FIXP      /GET AND FIX FL PT VAL
04433 4240      JMS COMMON
04434 1346      TAD MASK
04435 3702      DCA I LHOLD
04436 6201      CDF
04437 5631      JMP I PUT

```

```

/COMMON      THIS ROUTINE IS UED BY GET AND PUT
/

```

```

04440 0000 COMMON, 0
04441 3346      DCA MASK      /TEMP STORAGE
04442 4776'     JMS INI      /INITIALIZE ARRAY, SPECIFIED BY USE
04443 4775'     JMS GETARG    /GET L
04444 4514      JMS I FIXP
04445 7100      CLL
04446 1774'     TAD BUFBK
04447 3302      DCA LHOLD

```

/SOURCE PROGRAM BASIC. UF

PAL8-V98 07/10/74 PAGE 5-1

04450	7430	SZL	/CROSSED FIELDS
04451	1073	TAD K0010	/YES
04452	1773	TAD CDFBAK	
04453	3254	DCA . +1	
04454	0000	0	
04455	5640	JMP I COMMON	

EJECT

/ WHEN INTERRUPT OCCURS COME HERE

04456	7300	SERVIC,	CLA CLL	/ASSIGN TO LOC 0002
04457	6131		CLSK	
04460	7410		SKP	
04461	5772'		JMP ADSAM	/CLOCK INTERRUPT
04462	6031		KSF	
04463	7410		SKP	
04464	5271		JMP KKBRD	/TTY INTERRUPT
04465	6041		TSF	/DUE TO LAST ECHO?
04466	7402		HLT	/SPURIOUS
04467	6042		TCF	
04470	5771'		JMP TION	
04471	6036	KKBRD,	KRB	
04472	6046		TLS	
04473	1300		TAD M203	
04474	7640		SZA CLA	
04475	5771'		JMP TION	/IGNORE CHAR
04476	4556		JMS I PISWAP	/CNTR/C TYPED
04477	5770'		JMP 7605	/RETURN TO MONITOR
04500	7575	M203,	-203	
04501	0000	MSKCTR,	0	

EJECT

/ARG123 THIS ROUTINE GETS 3 ARGS AND STORES
/ THEIR FL. PT. VALUES IN ARG1, ARG2, & ARG3
/ AND THEIR FIXED VALUES AT ADR, ADR+1
/ AND ADR+2
/

04502	0000	ARG123, 0	
04503	1702	TAD I ARG123	/GET ADR-1 FOR THE ARGS
04504	3011	DCA XR1	
04505	2302	ISZ ARG123	
04506	4514	JMS I FIXP	
04507	3411	DCA I XR1	
04510	4775	JMS GETARG	
04511	4514	JMS I FIXP	
04512	3411	DCA I XR1	
04513	7001	IAC	
04514	4775	JMS GETARG	
04515	4514	JMS I FIXP	
04516	3411	DCA I XR1	
04517	5702	JMP I ARG123	

EJECT

/DRESET

USED TO RESET STARTING DIGITAL I/O BOARD
AND CTR; WAIT FOR O.F.; SAMPLE EACH BOARD.

04520	4776'	DRESET,	JMS INI	
04521	1767'		TAD NSAM	
04522	7041		DIA	
04523	3766'		DCA NCTR	
04524	1765'		TAD CSAM	/STARTING BOARD #
04525	7106		CLL RTL	
04526	7004		RAL	
04527	1356		TAD P6473	
04530	3354		DCA KDBCI	

/WAIT LOOP

04531	6131		CLSK	
04532	5331		IMP -1	
04533	6135		CLSA	/READ STATUS
04534	7200		CLA	

/SAMPLE

04535	1073	DIGSAM,	ALL BOARDS	
04536	1354		TAD K0010	
04537	4346		TAD KDBCI	
04540	4764'		JMS DIGIO	
04541	2766'		JMS PUTBUF	
04542	5335		ISZ NCTR	
04543	2763'		IMP DIGSAM	
04544	5321		ISZ PCTR	/JOB DONE?
04545	5762'		IMP DRESET+1	/NO

/DIGIO

IMP DONE /YES, DONE IN CLK ROUTINE
ENTER WITH DBCI SETUP FOR CORRECT BOARD; SET UP
LOT, SAMPLES BOARD, EXITS WITH VAL IN AC

04546	0000	DIGIO,		
04547	3354		DCA KDBCI	
04550	1354		TAD KDBCI	
04551	7001		TAC	
04552	3353		DCA KDBRI	
04553	0000	KDBRI,		
04554	0000	KDBCI,		
04555	5746		IMP I DIGIO	
04556	6473	P6473,	6473	
04557	0012	FL513,	12	
04560	2002		2002	
04561	0000			
04562	4144			
04563	4075			
04564	3474			
04565	4072			
04566	4077			
04567	4073			
04570	7605			
04571	4256			
04572	4213			
04573	3452			
04574	3434			
04575	4163			

/SOURCE PROGRAM BASIC.UF

PfL8-Y9B 07/10/74 PAGE 5-5

04576 3425

04577 4337

4600 PAGE

\$\$

ADAC	3472	FADD	6000	PUT	4431
ADC	3531	FCLR	0137	PUTBUF	3474
ADCL	6530	FDIV	5722	PUTCDF	3475
ADDR	3620	FF	0037	PVAL	3557
ADLE	6536	FFDIVI	5412	P13	4206
ADLM	6531	FFGE	6237	P6473	4556
ADRB	6533	FFLOW	4200	P6503	4307
ADRS	6537	FFNEG	6130	P6505	3424
ADSAM	4213	FFNOI	6213	RCLK	4223
ADSAM1	4207	FFPU	6254	REF	4310
ADSAM2	4231	FGETI	0134	REFRFL	0011
ADSAM4	4276	FIXP	0114	REP	3634
ADSK	6534	FL1012	3762	RTN	3713
ADST	6532	FL1014	3757	S	4154
APLT	3653	FL4016	4160	SCNTR	4337
ARGPRE	0307	FL51	4557	SERYC	4456
ARG123	4502	FMPY	5600	SPF	6040
ARSTRT	0022	FNEG	0140	SRESET	4245
BPLT	3735	FNORI	0136	TION	4256
BUFADR	0012	FPP	4000	UNSFIX	1615
BUFBK	3434	FPUTI	0135	USECON	0006
CDFBAK	3452	FSUB	6117	VTRX	3742
CDFIO	0020	GET	4400	VTRY	3743
CLAB	6133	GETAIG	4163	XR0	0010
CLOE	6132	HORD	0045	XR1	0011
CLSA	6135	IA	1465	XR2	0012
CLSK	6131	IAA	4300	XR3	0013
CLW	3551	INI	3425	XR4	0014
CLW1	3560	INIT	3722	XR5	0015
CLZE	6130	INSAM	0064		
CNTR	3641	JOB	3514		
COMMON	4440	KDBC	4554		
CONT	3656	KDBR	4553		
CPLT	3715	KKBR	4471		
CSAM	4072	KM6	3473		
DAC	3453	K0010	0073		
DBCO	6505	K0011	0074		
DBSO	6506	K0200	0077		
DIGIO	4546	LHOLD	4502		
DIGSAM	4535	LORD	0046		
DILX	6053	MASK	4546		
DILY	6054	MAXP'S	0010		
DISD	6052	MEM	3765		
DIXY	6055	MSKCTR	4501		
DONE	4144	M203	4500		
DPLT	3671	NCTR	4077		
DRESET	4520	NEGCHK	4337		
DRI	4302	NSAM	4073		
DRO	3400	PCTR	4075		
DROIOT	3412	PISWAP	0156		
DRO1	3415	PLOT	3744		
DX	0013	PLT	3600		
EARLY	3567	PLY	3510		
EXP	0044	PSAM	4074		
FACCKR	0365	PSWAP	1230		

ERRORS DETECTED: 0
LINKS GENERATED: 75

