

ADF11

MULTI CHANNEL SAMPLE
MD-11-DZADK-A
HOLD DIAGNOSTIC

EP-DZADK-A-DL

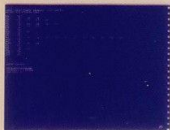
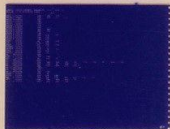
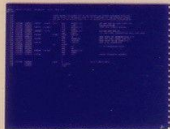
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IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DZADK-A-LA
PRODUCT NAME: (ADF11) MULTI CH. SAMPLE & HOLD DIAG.
DATE CREATED: AUGUST 12, 1975
MAINTAINER: IPGCS
AUTHOR: RAY BALDWIN

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1      ;THIS PROGRAM IS INTENDED TO EXERCISE THE AC02 SAMPLE AND HOLD
2      ;OPTION WHICH IS INTERFACED TO THE ADF11 ANALOG TO DIGITAL CONVERTER.
3      ;
4      ;THE PROGRAM WILL TAKE CONVERSIONS IN THE SEQUENTIAL CHANNEL MODE
5      ;USING THE VALUES IN LOCATIONS "FIRSCH" & "LASTCH" AS THE RANGE
6      ;OF THE CHANNELS TO BE SAMPLED.
7      ;
8      ;THE CHANNELS RANGE IS NOT TO EXCEED THE ABSOLUTE VALUE OF LOCATION
9      ; "MAXCH"
10     ;THE ENTIRE RANGE OF THE CHANNELS IS SAMPLED AND THE CONVERTED
11     ;DATA IS STORED IN TABLE BUFF:"
12     ;
13     ;SWITCH REGISTER BIT 15 IS RAISED TO INITIATE THE SEQUENCE OF
14     ;CONVERSIONS THEN IF SWITCH REGISTER BIT 14 IS RAISED THE
15     ;SWITCH REGISTER BITS 0-7 ARE USED TO INDEX INTO THE DATA BUFFER
16     ;TO RETRIEVE DATA WHICH IS THEN DISPLAYED IN THE CONSOLE SWITCH
17     ;LIGHTS .THE DISPLAYING WILL CONTINUE UNTILL BIT
18     ;14 IS LOWERED. TO TAKE A NEW TABLE OF CONVERSIONS BIT 15 MUST
19     ;BE RAISED.
20     ;
21     ;SWITCH REGISTER BIT 13 IS RAISED TO INITIATE CALIBRATION
22     ;ROUTINE FOR A461'S
23     ;IF A CALIBRATION ROUTINE IS TO BE RUN BIT 15 AND
24     ;BIT 13 MUST BE USED IN CONJUNCTION
25     ;
26     ;BEFORE INITIATING THIS TEST THE OPERATOR MUST PRE-
27     ;LOAD LOCATIONS "FIRSCH:", "LASTCH:" & "MAXCH:".

```

30		.ABS	
31	177570	SWR=177570	;SWITCH REGISTER
32	100000	BIT15=100000	
33	040000	BIT14=040000	
34	020000	BIT13=020000	
35	177776	PSR=177776	;PROCESSOR STATUS
36	000006	SP=%6	
37	000005	R5=%5	
38	000004	R4=%4	
39	000003	R3=%3	
40	000002	R2=%2	
41	000001	R1=%1	
42	000007	PC=%7	
43			
44			
45		;DEVICE REGISTERS	
46			
47	164000	ADSWR=164000	
48	164002	ADWRA=164002	
49	164004	ADWCR=164004	
50	164006	ADCR=164006	
51	164010	ADCSR=164010	
52	164012	ADDBP=164012	
53	164014	ADWkH=164014	
54	164016	ADIMO=164016	


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55      000400      000400      . = 400
56      000400      000000      FIRSCH: 0
57      000402      000000      LASTCH: 0
58      000404      000000      MAXCH: 0
59      000406      000000      WCNT: 0
60      000410      000274      ADINT: 274
61      000412      000276      ADLVL: 276
62      000414      000001      LOOP: 1
63
64
65
66      001000      001000      . = 1000
67      001000      000000      STACK: 0
68      001000      001000      . = 1000
69      001000      000005      START: RESET
70      001002      012706      001000      MOV      @STACK,SP
71      001006      012767      000340      176762      MOV      @340,PSR
72
73
74
75      001014      000005      RESET
76      001016      016701      177360      MOV      LASTCH,R1
77      001022      016702      177352      MOV      FIRSCH,R2
78      001026      160201      SUB      R2,R1
79      001030      010167      177352      MOV      R1,WCNT
80      001034      020167      177344      MOV      R1,MAXCH
81      001040      003401      CMP      R1,MAXCH
82      001042      000000      RLE      RET
83      001044      016701      177332      RET:      MOV      LASTCH,R1
84      001050      005767      176514      TST      SWR
85      001054      100373      BPL      RET
86
87      ;PRIME ADF11 TO TAKE CONVERSIONS IN THE SEQUENTIAL CHANNEL MODE FROM
88      ;FIRST CHANNEL.
89      001056      052737      020000      164010      BIS      @20000,@ADCSR
90      001064      005267      177316      INC      WCNT
91      001070      005467      177312      NEG      WCNT
92      001074      016737      177306      164004      MOV      WCNT,@ADWCR
93      001102      012737      001240      164002      MOV      @BUFF,@ADWRA
94      001110      052701      111000      HIS      @111000,R1
95      001114      010137      164006      MOV      R1,@ADCR
96      001120      052702      110000      BIS      @110000,R2
97      001124      010237      164006      MOV      R2,@ADCR
98
99      ;
100     ;WAIT FOR I/O COMPLETION BY TESTING THE STATUS OF THE ADF11S CONTROL &
101     ;STATUS REGISTER.
102     ;
103     001130      005737      164010      2s:      TST      @ADCSR
104     001134      100001      RPL      3s
105     001136      000000      HALT
106     001140      105737      164010      3s:      TSTB     @ADCSR
107     001144      100371      RPL      26
108

```

;VALUE OF HIGHEST CHANNEL * (OCT.)
;WORD COUNT VALUE
;# OF ITERATIONS OF DISPLAY LOOP (MORE THAN 0)
;IF LEGAL THE DIFFERENCE IS W.C.
;CHANNELS NOT WITHIN RANGE
;WAIT FOR SIG TO TAKE CONVERSIONS
;INIT THE ADF11
;+1 TO INCLUDE CHO
;SET UP THE W.C.
;LOAD THE WORD COUNT REGISTER
;LOAD DATA BUFFER A POINTER
;FINAL CHANNEL,DMA, SEQ
;LOAD FINAL CHANNEL
;SEQ,DMA
;AND START CONVERT OR ENABLE START IF EXTERNAL
;TEST FOR ERROR
;ADF11 STATUS ERROR!
;TEST THE DONE BIT


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109      ;TEST SWITCH REGISTER BIT 14 IF RAISED USE SWITCH REGISTER BITS 7-0
110      ;AS AN INDEX TO RETRIEVE DATA TO BE DISPLAYED IN THE CONSOLE LIGHTS
111      ;IF BIT 14 NOT RAISED SCAN 15 & 14 WAITING FOR OPERATOR INTERVENTION
112      ;
113 001146 032767 020000 176414 CYC:  BIT  #BIT13,SWP      ;IF SET BIT 13 OVER RIDES ALL
114 001154 001010                BNE  DISP      ;CALIB.ROUTINE
115 001156 032767 040000 176404      BIT  #BIT14,SWP      ;TEST FOR OUTPUT DESIRED
116 001164 001004                BNE  DISP
117 001166 032767 100000 176374      BIT  #BIT15,SWP      ;14 NOT SET TRY 15
118 001174 001301                BNE  START      ;GO TAKE MORE CONVERSIONS,THEN COME BACK
119 001176 116703 176366      DISP:  MOVB  SWP,R3
120 001202 006103                ROL   R3      ;SET INDEX TO ADDRESS FULL WORD
121 001204 062703 001240      ADD   #BUFF,R3      ;GET THE FULL INDEX INTO R3
122 001210 011300                MOV   (R3),R0      ;GET VALUE TO BE DISPLAYED
123 001212 016701 177176      MOV   LOOP,R1      ;SET # OF ITERATIONS
124 001216 000005                15:  RESET
125 001220 005301                DEC   R1      ;-1 TO ITERATION COUNT
126 001222 001375                BNE   15
127 001224 032767 020000 176336      BIT  #BIT13,SWP
128 001232 001262                BNE  START
129 001234 000167 177706      JMP   CYC      ;CHECK OPERATORS DESIRES
130      ;
131      ;
132      ;
133 001240 000000      BUFF:  0      ;DATA BUFFER AREA
134      003242      .=.+2000
135      000001      .END

```


ADCH = 164006	50*	95*	97*											
ADCSP = 164010	51*	89*	103	106										
ADDR = 164012	52*													
ADIMO = 164016	54*													
ADINT 000410	60*													
ADLVL 000412	61*													
ADSWR = 164000	47*													
ADWCR = 164004	49*	92*												
ADWRA = 164002	48*	93*												
ADWRB = 164014	53*													
BIT13 = 020000	34*	113	127											
BIT14 = 040000	33*	115												
BIT15 = 100000	32*	117												
BUFF 001240	93	121	133*											
CYC 001146	113*	129												
DISP 001176	114	116	119*											
FIRSCH 000400	56*	77												
LASTCH 000402	57*	76	83											
LOOP 000414	62*	123												
MAXCH 000404	58*	80												
PC = 0000007	42*													
PSR = 177776	35*	71*												
RET 001044	81	83*	85											
R0 = 0000000	122*													
R1 = 0000001	41*	76*	78*	79	80	83*	94*	95	123*	125*				
R2 = 0000002	40*	77*	78	96*	97									
R3 = 0000003	39*	119*	120*	121*	122									
R4 = 0000004	38*													
R5 = 0000005	37*													
SP = 0000006	36*	70*												
STACK 001000	67*	70												
START 001000	69*	118	128											
SWR = 177570	31*	84	113	115	117	119	127							
WCNT 000406	59*	79*	90*	91*	92									
. = 003242	55*	66*	68*	134*										

.MAIN. MACY11 27(657) 22-JUL-75 13:37 PAGE 1-4
 DAN.SRC CROSS REFERENCE TABLE

ADD	121												
BIS	89	94	96										
BIT	113	115	117	127									
BLE	81												
BNE	114	116	118	126	128								
BPL	85	104	107										
CMP	80												
DFC	125												
HALT	82	105											
INC	90												
JMP	129												
MOV	70	71	76	77	79	83	92	93	95	97	122	123	
MOVB	119												
NEG	91												
RESET	69	75	124										
ROL	120												
SUB	78												
TST	84	103											
TSTB	106												
.ABS	30												
.END	135												

ERRORS DETECTED: 0

*AC02,AC02/CRF=DAN.SRC
 RUN-TIME: 0 0 0 SECONDS
 CORE USED: 5K