

KWCB DEC/X11 SYSTEM EXERCISER MODULE MACY11 30A(1052) 12-OCT-78 16:45 PAGE 2
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IDENTIFICATION

PRODUCT CODE: AC-E791B-MC
PRODUCT NAME: CXKWCBO KW11-W MODULE
PRODUCT DATE: SEPTEMBER 1978
MAINTAINER: DEC/X11 SUPPORT GROUP

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1. ABSTRACT:-----

'KWC' IS AN IOMOD THAT EXERCISES THE KW11-W WATCHDOG
TIMER OPTION. THE KW11W IS AN INTERRUPT DRIVEN HARDWARE
MONITOR WHICH MUST BE REPULSED UPON AN INITIAL TIME-OUT
INTERRUPT (T2), BEFORE THE TIMER REACHES ITS (T3) AND FATAL
TIME OUT. IF THE TIMER IS PULSED CONSECUTIVELY WITHIN A PREDETERMINED
TIME FRAME (T1 TIME) A SHORT LOOP INTERRUPT WILL OCCUR.

2. REQUIREMENTS:-----

HARDWARE:

- 1 M7823 KW11W LOGIC MODULE
- 1 M105 DEVICE ADDRESS MODULE
- 1 M7821 DEVICE INTERRUPT MODULE

STORAGE:: KWC REQUIRES:

- 1. DECIMAL WORDS: 167
- 2. OCTAL WORDS: 0247
- 3. OCTAL BYTES: 516

3. PASS DEFINITION:-----

ONE PASS IS 600 TIME OUTS OF THE WATCH DOG DELAY (T2).

4. EXECUTION TIME:-----

EXECUTION TIME IS DEPENDENT UPON THE TIME DURATION
OF THE WATCHDOG DELAY (T2), WHICH IS HARDWARE SELECTABLE ONLY.

5. CONFIGURATION REQUIREMENTS:-----

DEFAULT PARAMETERS:
DEVADR: 172400 VECTORS:1.
BRI:7 DEVCNT:1

SETUP REQUIREMENTS: USER MUST SPECIFY THE VECTOR
ADDRESS OF THE KW11-W AT CONFIGURATION TIME.

6. DEVICE/OPTION SETUP:

***** THE TEST CONNECTOR (7009463) MUST BE INSTALLED ON M7823 MODULE. *****

7. MODULE OPERATIONS:

THE KW11W IS PRIMED BY FIRING THE WATCH DOG DELAY
(T2) AND ENABLING ITS INTERRUPT. TIME OUT OF (T2) GENERATES
AN INTERRUPT WHICH GETS SERVICED BY PULSING THE WATCH DOG
(T2) DELAY. ANY ILLEGAL STATUS IS REPORTED BY THE "ERROR"
HANDLER ROUTINE.

8. OPERATING OPTIONS:

NONE

9. NON-STANDARD PRINTOUTS:

NONE

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000000 IOMOD <KWCB> 172400,172400,600,134
000000 MODULE 140000,KWCB,172400,600,134
; TITLE KWCB DEC/X11 SYSTEM EXERCISER MODULE
DDXCOM VERSION 6 23-MAY-78
;*****.LIST BIN*****
000000 BEGIN: .ASCII /KWCB / ;MODULE NAME.
000000 053513 041103 040 XFLAG: .BYTE OPEN ;USED TO KEEP TRACK OF WBUFF USAGF
000005 000 ADDR: 172400+0 ;1ST DEVICE ADDR.
000006 172400 VECTOR: 1+0 ;1ST DEVICE VECTOR.
000010 000001 BR1: .BYTE PRTY7+0 ;1ST BR LEVEL.
000012 340 BR2: .BYTE PRTY+0 ;2ND BR LEVEL.
000013 000 DVID1: +1 ;DEVICE INDICATOR 1.
000014 000001 SR1: OPFM ;SWITCH REGISTER 1
000016 000000 SR2: OPEN ;SWITCH REGISTER 2
000020 000000 SR3: OPEN ;SWITCH REGISTER 3
000022 000000 SR4: OPEN ;SWITCH REGISTER 4
000024 000000
;*****
000026 140000 STAT: 140000 ;STATUS WORD.
000030 000734 INIT: START ;MODULE START ADDR
000032 000734 SPOINT: MODSP ;MODULE STACK POINTFP.
000034 000000 PASCNT: 0 ;PASS COUNTER.
000036 000600 ICMNT: 600 ;# OF ITERATIONS PER PASS=600
000040 000000 ICOUNT: 0 ;LOC TO COUNT ITERATIONS
000042 000000 SOFCNT: 0 ;LOC TO SAVE TOTAL SOFT ERRORS
000044 000000 HRDCNT: 0 ;LOC TO SAVE SOFT ERRORS PER PASS
000046 000000 SOPPAS: 0 ;LOC TO SAVE HARD ERRORS PER PASS
000050 000000 HRDPAS: 0 ;LOC TO SAVE HARD ERRORS PER PASS
000052 000000 SYSCHT: 0 ;# OF SVS ERRORS ACCUMULATED
000054 000000 RANRUM: 0 ;HOLDS RANDOM # WHEN RAND MACRG IS CALLED
000056 000000 CONFIG: 0 ;RESERVED FOR MONITOR USE
000060 000000 RES1: 0 ;RESERVED FOR MONITCP USE
000062 000000 RES2: 0
000064 000000 SVR0: OPEN ;LOC TO SAVE R0.
000066 000000 SVR1: OPEN ;LOC TO SAVE R1.
000070 000000 SVR2: OPEN ;LOC TO SAVE R2.
000074 000000 SVR3: OPEN ;LOC TO SAVE R3.
000076 000000 SVR4: OPEN ;LOC TO SAVE R4.
000078 000000 SVR5: OPEN ;LOC TO SAVE R5.
000080 000000 SVR6: OPEN ;LOC TO SAVE R6.
00100 000000 CSRA: OPEN ;ADDR OF CURRENT CSP.
00102 000000 SBADR: ;ADDR OF GOOD DATA, OR
00104 000000 ACSR: OPEN ;CONTENTS OF CSP.
00106 000000 WASADR: ;ADDR OF BAD DATA, OR
00108 000000 ASTAT: OPEN ;STATUS REG CONTENTS.
00110 000000 ERRTP: ;TYPE OF ERROR.
00112 000000 ASB: OPEN ;EXPECTED DATA.
00114 000000 AWAS: OPEN ;ACTUAL DATA.
00116 000000 RSTPT: RSTRT ;RESTART ADDRESS AFTER END OF PASS
00118 000000 WOTO: OPEN ;WRDS TO MEMORY PER ITERATION
00120 000000 WDFR: OPEN ;WRDS FROM MEMORY PER ITERATION
00122 000134 INTR: UPEN ;# OF INTERRUPTS PER ITERATION
IONUM: 134 ;MODULE IDENTIFICATION NUMBER=134
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000040 .REPT SPSIZ ;MODULE STACK STARTS HERE.
.NLIST
.WORD 0
.LIST
.ENDR
000224 MODSP:
;*****
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187 ;DEVICE REGISTERS LISTED LINEARLY
188 CSR: OPEN ;CONTROL + STATUS WATCH-DOG
189 CINT: OPEN ;INTERRUPT FLAG CLEAR INST.
190 ECSR: OPEN ;EXTERNAL CONTROL + STATUS
191 SWRU: OPEN ;SWITCH BUS
192 ;
193 ;
194 ;
195 ;
196 ;
197 000233* 012767 000001 177656 START: MOV #1,INTR ;ONE INTERRUPT/ITERATION
198 000242* 016705 177540 MOV ADDR,R5 ;SET UP ADDRESSES FOR THIS MODULE
199 000246* 010567 177552 RESTRT: MOV R5,CSR
200 000252* 005725 TST (R5)+ ;+2 TO ADDR.
201 000254* 010567 177746 MOV R5,CINT
202 000260* 005725 TST (R5)+ ;+2 TO ADDR.
203 000262* 010567 177742 MOV R5,ECSR
204 000266* 005725 TST (R5)+ ;+2 TO ADDR.
205 000270* 010567 177736 MOV R5,SWRU
206 000274* 016767 177724 MOV CSR,CSRA ;SET THIS CSR ADDR. FOR CURRENT ONE
207 000302* 016767 177530 MOV ICOUNT,COUNT ;SET FOR END PASS = 600 TRIPS
208 000310* 005777 177712 TST @CINT ;CLEAR ANY FLAG'S DONE BY ACCESSING THIS WORD
209 000314* 016700 177470 MOV VECTOR,RO ;SET VECTORS FOR INT. SERVICE
210 000320* 012720 000370* MOV #KWM,(RO)+
211 000324* 016720 177462 MOV BRL,(PO)+
212 000328* 012720 000370* MOV #KWM,(RO)+
213 000334* 016710 177452 MOV #400,(RO)
214 000340* 052777 000400 177656 BIS #100,@CSR ;CLEAR RECEIVE FLAG
215 000346* 005777 177654 TST @CINT ;CLEAR T1 & T2 BY ACCESSING THIS WORD
216 000352* 012777 000100 177644 MOV #100,@CSR ;ENABLE INT.
217 000360* 005777 177640 INC @CSR ;ENABLE KWM
218 000364* 104400 000000* EXITS,BEGIN ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
219 ;
220 ;
221 ;
222 ;
223 ;
224 ;SERVICE INTERRUPTS BY FIRST TESTING FOR A T2 (ONLY)
225 ;FLAG AND PULSE TIMER TO KEEP RUNNING
226 ;
227 000370* ;KWM:
228 000370* 000004 000000* 000376* -----PIRQS,BEGIN,KWMA ;QUEUE UP TO CONTINUE AT KWMA AND RTI
229 ;-----
230 ;
231 ;KWMA:
232 000376* 005777 177622 TST @CSR ;TEST FOR T2 FLAG ONLY
233 000402* 100422 BIT #40000,@CSR ;REPORT SHORT LOOP FLAG SET
234 000404* 032777 040000 177612 RNE STATU ;TEST FOR RECEIVE FLAG
235 000414* 001016 RNE STATU ;REPORT THAT RECEIVE FLAG SET
236 000420* 100013 TSTB @CSR ;TEST FOR A T2 FLAG
237 000422* 005777 177600 BPL STATU ;REPORT A STATUS ERROR NO FLAG
238 000426* 005367 000062 TST @CINT ;CLR T2 FLAG
239 000432* 001424 BEQ COUNT ;
240 000434* 104413 000000* FIN ;REPORT AN END PASS IF DONE
241 ; ;SIGNAL END OF ITERATION.
242 000440* 005277 177560 INC @CSR ;MONITOR SHALL TEST END OF PASS
;KEEP TIMER MOVING

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243 000444* 104400 000000* EXITS,BEGIN ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
244 ;STATUS:
245 000450* 017767 177550 177424 MOV @STATUS,ERROR
246 000456* 042777 000100 177540 BIC #100,@CSR ;SHUT-OFF INTERRUPT
247 000464* 012767 000011 177414 MOV #11,@RRTYP ;ILLEGAL INTERRUPT
248 ;*****
249 000472* 104405 000000* 000000 (RDRS,BEGIN,NULL ;*****
250 ;*****
251 000500* 104410 000000* ENDS,BEGIN ;
252 ;
253 ;REPORT AN ENDPASS OF 600 TIMER INTS.
254 000504* 005077 177514 CLR @CSR ;CLEAR INT. EN
255 000510* 104413 000000* ENDIS,BEGIN ;SIGNAL END OF ITERATION.
256 ;MONITOR SHALL TEST END OF PASS
257 000514* 000000 COUNT: OPEN ;COUNT INTS.
258 000001 .END

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CROSS REFERENCE TABLE -- USEF SVNCL

SFO 0010

WDFR 000116R 177#
WDT0 000114R 176#
XFLAG 000005R 134#

. ARS. 000000 000
000516 001

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

XKWCBO,XKWCBO/SOL/CRF:SYM=DDXCOM,XKWCPO
RUN-TIME: 1 1 .2 SECONDS
RUN-TIME RATIO: 26/2=10.5
CORE USED: 7K (13 PAGES)