

Digital Joypad Driver#

Tested with a Logitech Wingman Precision USB. Other digital Joypad might work. Please send feedback.

Logitech Rumblepad 2 USB Driver (new Modular Driver Version 2)#

see [Logitech Rumblepad 2 USB](#)

Generic VBI Driver#

Will work with Atari Basic, Turbo Basic, ACTION!, XFORTH.

Load driver and use Stick(0) and Strig(0) as normal.

Related Pages#

- [Boulder Dash 1 Patch](#)

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01000          .LI OFF
01010 *****
01020 ** 6502 USB DEVELOPMENT **
01030 ** (C) 2004 BY ABBUC **
01040 ** REGIONALGRUPPE FFM **
01050 ** DIGITAL JOYPAD DRIVER**
01060 ** FOR USB SL811HS **
01070 ** VERSION 1.0 20041030 **
01080 *****
01090 ;
01100          .OR $3500
01110          .OF "D:USBJOYPD.COM"
01120 ;
01130 ; SL811 MEMORY ADDRESSES
01140 ; CHANGE ACCORDING TO YOUR
01150 ; CONFIGURATION
01160 USBSEL    = $D500
01170 USBDTA   = $D501
01180 ;
01190 ; USB REGISTER SL811
01200 ;
01210 CTL       = $00 ; USBA HOST CTL
01220 BUFADR    = $01 ; BUFFER ADDRESS
01230 BUFLLEN  = $02 ; BUFFER LEN
01240 PIDEP     = $03 ; HOST PID
01250 PKSTAT    = $03 ; PAKET STATUS
01260 FNADDR    = $04 ; USB ADDR (WO)
01270 MCNTRL   = $05 ; MAIN CONTROL
01280 CDTASET  = $0E
01290 SOFCNT   = $0F ; CNTRL 2 REG
01300 SOFLOW   = $0E ; SOF LOW
01310 INTSTAT  = $0D ; IRQ STATUS
01320 ;
01330 ; USB CONSTANTS
01340 ;
01350 ; INTENA AND INTSTAT MASKS
01360 EPODONE  = $01
01370 EP1DONE  = $02
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01380 EP2DONE = $04
01390 EP3DONE = $08
01400 DMADONE = $10
01410 SOFREC = $20
01420 USBRSET = $40
01430 DMASTAT = $80
01440 ;
01450 ; ENDPOINT CONTROL REG
01460 EPC0 = $00 ; ENDPOINT 0
01470 EPC1 = $10 ; ENDPOINT 1
01480 EPC2 = $20 ; ENDPOINT 2
01490 EPC3 = $30 ; ENDPOINT 3
01500 ;
01510 ; ENDPOINT REGISTER OFFSET
01520 ;
01530 EPC = $00 ; CONTROL
01540 EPBA = $01 ; BASE ADDRESS
01550 EPBL = $02 ; BASE LENGTH
01560 EPPS = $03 ; PACKET STATUS
01570 EPTC = $04 ; TRANSFERCOUNT
01580 ;
01590 ; PID VALUES
01600 ;
01610 SOFPID = $05 ; SOF PID
01620 INPID = $90 ; PACKET ID
01630 SETPID = $D0 ; SET ADDRESS REQ
01640 ;
01650 ; SET ADDRESS PACKET
01660 ;
01670 SETADDR .HX 0005010000000000
01680 ;
01690 ; SET CONFIG PACKET
01700 ;
01710 SETCONF .HX 0009010000000000
01720 ;
01730 ; ATARI MEMORY LOCATIONS
01740 ;
01750 STICK0 = $0278
01760 STRIG0 = $0284
01770 SETVBV = $E45C
01780 XITVBV = $E462
01790 VCOUNT = $D40B
01800 ;
01810 -----
01820 USBRESET
01830 LDA #$AE ; SET SOF
01840 LDX #SOF CNT ; HIGH COUNT
01850 JSR REGSTORE
01860 ;
01870 LDA #$08 ; RESET USB
01880 LDX #MCNTRL ; FULLSPEED
01890 JSR REGSTORE
01900 ;
01910 LDA #$10
01920 JSR PAUSE
01930 ;
01940 LDA #00
01950 LDX #MCNTRL
01960 JMP REGSTORE

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01970 ;
01990 -----
02000 QUERYUSBRESET
02010 ; OUT: A=0 NO USB RESET
02020 ;     A!=0 USBRESET
02030 ;
02040 ;
02050 ;
02060         LDX #INTSTAT
02070         JSR REGFETCH
02080         AND #USBRSET
02090         RTS
02100 -----
02110 CLEARIRQ
02120         LDA #$FF
02130         LDX #INTSTAT
02140         JMP REGSTORE
02150 -----
02160 SPEED
02170 ; OUT: A=0 LOW SPEED DEVICE
02180 ;     A!=0 HIGH SPEED DEVICE
02190 ;         OR ERROR
02200 ;
02210         JSR USBRESET
02220         JSR CLEARIRQ
02230         LDA #10
02240         JSR PAUSE
02250         JSR QUERYUSBRESET
02260         BEQ .1 ; NO RESET
02270         JSR CLEARIRQ
02280         LDA #$FF
02290         RTS
02300 ;
02310 .1     LDX #INTSTAT
02320         JSR REGFETCH
02330         AND #DMASTAT
02340         BNE .2
02350 ;
02360 ; LOW SPEED
02370 ;
02380         LDA #$AE
02390         LDX #SOFcnt
02400         JSR REGSTORE
02410 ;
02420         LDA #$E0
02430         LDX #CDTASET
02440         JSR REGSTORE
02450 ;
02460         LDA #$05
02470         LDX #MCNTRL
02480         JSR REGSTORE
02490 ;
02500         JSR SETUPUSB
02510         LDA #$00
02520 ;
02530 ; FULL SPEED OR ERROR
02540 ;
02550 .2
02560         RTS

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02570 -----
02580 SETUPUSB
02590     LDA #$50
02600     LDX #EPC0+EPPS
02610     JSR REGSTORE
02620 ;
02630     LDA #$00
02640     LDX #EPC0+EPTC
02650     JSR REGSTORE
02660 ;
02670     LDA #$01
02680     LDX #EPC0
02690     JSR REGSTORE
02700 ;
02710     LDA #25
02720     JSR PAUSE
02730 ;
02740     JMP CLEARIRQ
02760 -----
02770 INITJOYPD
02780     LDA #08
02790     LDX #MCNTRL
02800     JSR REGSTORE
02810 ;
02820     LDA #14
02830     JSR PAUSE
02840 ;
02850     LDA #$21
02860     LDX #MCNTRL
02870     JSR REGSTORE
02880 ;
02890     LDA #$10     ; $10 ADDR
02900     LDX #BUFADR ; DATABUF
02910     JSR REGSTORE
02920 ;
02930     LDA #$8      ; 8 BYTE
02940     LDX #BUFLEN ; DATABUF
02950     JSR REGSTORE
02960 ;
02970     LDA #$E0     ; 1MS EOP
02980     LDX #SOFLOW
02990     JSR REGSTORE
03000 ;
03010     LDA #$EE
03020     LDX #SOF CNT
03030     JSR REGSTORE
03040 ;
03050 ; SET BUFFER FOR SETUP-ADDRESS
03060 ; REQUEST = 1
03070 ;
03080     LDY #8
03090 .1   TYA
03100     CLC
03110     ADC #$F     ; BUF ADDR
03120     TAX
03130     LDA SETADDR-1,Y
03140     JSR REGSTORE
03150     DEY
03160     BNE .1

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03170 ;
03180     LDA #00      ; WE USE
03190     LDX #FNADDR ; ADDR 0
03200     JSR REGSTORE
03210 ;
03220     LDA #SETPID
03230     LDX #PIDEP
03240     JSR REGSTORE
03250 ;
03260 .2     LDA #07
03270     JSR PROCESS
03280     AND #04
03290     BNE .2
03300 ;
03310     LDA #20
03320     JSR PAUSE
03330 ;
03340     LDA #INPID
03350     LDX #PIDEP
03360     JSR REGSTORE
03370 ;
03380     LDA #03
03390     JSR PROCESS
03400 ;
03410 ; SELECT CONFIGURATION 1
03420 ;
03430     LDY #8
03440 .3     TYA
03450     CLC
03460     ADC #$F
03470     TAX
03480     LDA SETCONF-1,Y
03490     JSR REGSTORE
03500     DEY
03510     BNE .3
03520 ;
03530     LDA #01
03540     LDX #FNADDR ; NEW ADDR
03550     JSR REGSTORE
03560 ;
03570     LDA #SETPID
03580     LDX #PIDEP
03590     JSR REGSTORE
03600 ;
03610 .4     LDA #07
03620     JSR PROCESS
03630     AND #04
03640 ;
03650     BNE .4
03660 ;
03670     LDA #INPID
03680     LDX #PIDEP
03690     JSR REGSTORE
03700 ;
03710     LDA #03
03720     JSR PROCESS
03730 ;
03740     LDA #INPID
03750     ORA #01

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03760          LDX #PIDEP
03770          JSR REGSTORE
03780 ;
03790          RTS
03800 -----
03810 ; PRINT INLINE STRING
03820 ; END MARKER '@'
03830 ;
03840 PRINT     PLA          get Return address
03850          STA $D0      from Stack
03860          PLA          and store
03870          STA $D1      as pointer
03880 ;
03890 INCP      INC $D0      increase
03900          BNE .1       pointer
03910          INC $D1
03920 .1       LDX #0       read Char from RAM
03930          LDA ($D0,X)
03940          CMP #'@      End?
03950          BEQ ENDPR     yes==>
03960          JSR PUTCHAR   Print Char
03970          JMP INCP     back to loop
03980 ;
03990 ENDPR     LDA $D1      store pointer
04000          PHA          as new
04010          LDA $D0      return address
04020          PHA          on stack
04030          RTS          continue pgm
04040 ;          after text
04050 -----
04060 PUTCHAR   TAX          Print char
04070          LDA $E407    with OS
04080          PHA          Routine
04090          LDA $E406
04100          PHA
04110          TXA
04120          RTS          JUMP
04130 -----
04140 WAITJOYPAD
04150          JSR PRINT
04160          .HX 9B
04170          .AS "ATARI USB JOYPAD DRIVER"
04180          .HX 9B
04190          .AS "(c) 2004 ABBUC e.V."
04200          .HX 9B
04210          .AS "H. Reminder, T. Grasel, C. Strotmann"
04220          .HX 9B9B
04230          .AS "WAIT FOR DEVICE..."
04240          .HX 9B40
04250 .1       JSR SPEED
04260          CMP #0
04270          BNE .1
04280          JSR PRINT
04290          .AS "LOW SPEED DEVICE DETECTED!"
04300          .HX 9B40
04310 ;
04320          JSR INITJOYPD
04330          JSR PRINT
04340          .AS "JOYPAD INITIALIZED."

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04350      .HX 9B40
04360      LDX /JOYVBI
04370      LDY #JOYVBI
04380      LDA #7
04390      JMP SETVBV
04410 -----
04420 RESPART .OR $600
04430 -----
04440 REGFETCH
04450 ; IN:  X=USB REGISTER
04460 ; OUT: A=USB DATA
04470      STX USBSEL
04480      LDA USBDTA
04490      RTS
04500 -----
04510 REGSTORE
04520 ; IN:  A=USB DATA
04530 ;      X=USB REGISTER
04540      STX USBSEL
04550      STA USBDTA
04560      RTS
04570 -----
04580 PAUSE
04590 ; IN:  A=NUMBER OF 1/50 SEC
04600      TAX
04610 .1    LDA VCOUNT
04620      BNE .1
04630      DEX
04640      BNE .1
04650      RTS
04660 -----
04670 ;
04680 GETJOYPAD
04690 ;
04700      LDA #03
04710      JSR PROCESS
04720      AND #01
04730      BEQ .2 ; NO DATA
04740 ;
04750      LDX #$10
04760      JSR REGFETCH
04770      STA TRIGGER
04780      LDX #$11
04790      JSR REGFETCH
04800      STA HORIZ
04810      LDX #$12
04820      JSR REGFETCH
04830      STA VERTIC
04840 ;
04850 .2    RTS
04860 -----
04870 PROCESS
04880 ; IN:  A=USB COMMAND
04890 ; OUT: A=RETURNCODE
04900      PHA
04910      LDA #01
04920      LDX #INTSTAT
04930      JSR REGSTORE
04940 ;

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04950          PLA
04960          LDX #CTL
04970          JSR REGSTORE
04980 ;
04990 .1        LDX #INTSTAT
05000          JSR REGFETCH
05010          AND #$01
05020          BEQ .1
05030 ;
05040          LDX #PKSTAT
05050          JMP REGFETCH
05070 -----
05080 USB2ATA
05090          LDA #$0F
05100          STA STICK0
05110          LDA #1
05120          STA STRIG0
05130 ;
05140          LDA TRIGGER
05150          BEQ GETSTICK
05160          LDA #0
05170          STA STRIG0
05180 ;
05190 GETSTICK
05200          LDA HORIZ
05210          EOR #$80 ; NO VALUE?
05220          BEQ .10
05230          LDA STICK0
05240          LDX HORIZ
05250          BPL .1
05260          AND #$07 ; RIGHT
05270          BNE .2
05280 .1        AND #$0B ; LEFT
05290 .2        STA STICK0
05300 .10
05310          LDA VERTIC
05320          EOR #$80 ; NO VALUE?
05330          BEQ .20
05340          LDA STICK0
05350          LDX VERTIC
05360          BPL .11
05370          AND #$0D ; DOWN
05380          BNE .12
05390 .11       AND #$0E ; UP
05400 .12       STA STICK0
05410 .20       RTS
05420 -----
05430 JOYVBI
05440 ;          LDA STICK0
05450 ;          EOR #$0F
05460 ;          BNE .1          ; NORMAL STICK USED
05470          JSR GETJOYPAD
05480          JSR USB2ATA
05490 .1        JMP XITVBV
05500 -----
05510 TRIGGER   .HX 00
05520 HORIZ     .HX 00
05530 VERTIC    .HX 00
05540 -----

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05550 .OR \$2E0
05560 .DA WAITJOYPAD
05570 -----