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;MICROTAN TTL SERIAL TRANSFER PROGRAMM
;
;This is a simple memory data transfer program for two Microtans using their TTL
;Serial Ports.
;A 3 wire cable is required connecting the TTL i/p (pin 4) of the port on one
;Microtan to the TTL o/p (Pin 6) of the other Microtan plus a common ground wire
;(Pin 7).  Pins 7, 8, 10 & 11 of both TTL Ports need to linked and Link 2 on the
;Tanex board needs to be cut.
;The program resides in the upper part of the Micron's User memory starting
;at $1AD0.
;It needs to be loaded into both Microtans and is executed from the Monitor with
;the command G1AD0.
;The user selects whether the Microtan is to (S)end or (R)eceive and enters
;memory Start and End addresses.
;The user will will be prompted on both Microtans to press any key to commence
;transfer,
;The 'Receiving' Microtan key should be pressed first.  It will look for
;received data for around 3 seconds before timing out. The 'Sending' Microtan
;key needs to be pressed within this timeframe.
;The transmission of data commences immediately.  No check is made to determine
;if the other Microtan is ready to receive the data.

             10     TTL SERIAL TRANSFER
             20              ICHAR    =   $01
             30              HXPKL    =   $13
             40              HXPKH    =   $14
             50              PTRL     =   $56
             60              PTRH     =   $57
             70              EOFP     =   $58
             80              EOFPH    =   $59
             90              RETRY    =   $5A
             100             RETRY2   =   $5B
             110             DATA     =   $BFD0
             120             STATUS   =   $BFD1
             130             COMMND   =   $BFD2
             140             CONTRL   =   $BFD3
             150             MONTR    =   $FC00
             160             HEXPCK   =   $FF28
             170             OUTCR    =   $FE73
             180             OPCHR    =   $FE75
             190             POLLKB   =   $FDFA
             200             *        =   $1AD0
1AD0  20921B  210             JSR   INIT
1AD3  20CA1B  220             JSR   Q1MSG
1AD6  58      230             CLI
1AD7  20FAFD  240    POLKB1:  JSR   POLLKB
1ADA  A501    250             LDA   ICHAR
1ADC  C953    260             CMP   #'S
1ADE  F00A    270             BEQ   XMODTX
1AE0  C952    280             CMP   #'R
1AE2  F040    290             BEQ   XMODRX
1AE4  C91B    300             CMP   #$1B
1AE6  D0EF    310             BNE   POLKB1
1AE8  60      320             RTS
1AE9  EA      330             NOP
1AEA  2075FE  340    XMODTX:  JSR   OPCHR
1AED  205F1B  350             JSR   GETBEG
1AF0  206E1B  360             JSR   GETEND
1AF3  2073FE  370             JSR   OUTCR
1AF6  200E1C  380             JSR   PSTART
1AF9  20FAFD  385             JSR   POLLKB
1AFC  A000    390             LDY   #0
1AFE  B156    400       SEND:  LDA   (PTRL),Y
1B00  20AA1B  410             JSR   PUTCHR
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1B03  38      420             SEC
1B04  A558    430             LDA   EOFP
1B06  E556    440             SBC   PTRL
1B08  D00C    450             BNE   NEXT1
1B0A  A559    460             LDA   EOFPH
1B0C  E557    470             SBC   PTRH
1B0E  D006    480             BNE   NEXT1
1B10  20491C  490             JSR   PRGOOD
1B13  4C00FC  500             JMP   MONTR
1B16  E656    510     NEXT1:  INC   PTRL
1B18  D0E4    520             BNE   SEND
1B1A  E657    530             INC   PTRH
1B1C  D0E0    540             BNE   SEND
1B1E  20311C  550             JSR   PRERR
1B21  4C00FC  560             JMP   MONTR
1B24  2075FE  570    XMODRX:  JSR   OPCHR
1B27  205F1B  580             JSR   GETBEG
1B2A  206E1B  590             JSR   GETEND
1B2D  2073FE  600             JSR   OUTCR
1B30  200E1C  610             JSR   PSTART
1B33  20FAFD  615             JSR   POLLKB
1B36  A000    620             LDY   #0
1B38  20B71B  630      RECV:   JSR GETBYT
1B3B  901C    640             BCC   ERROR
1B3D  9156    650             STA   (PTRL),Y
1B3F  A558    651             LDA   EOFP
1B41  E556    652             SBC   PTRL
1B43  D00C    653             BNE   NEXTR
1B45  A559    654             LDA   EOFPH
1B47  E557    655             SBC   PTRH
1B49  D006    656             BNE   NEXTR
1B4B  20491C  657             JSR   PRGOOD
1B4E  4C00FC  658             JMP   MONTR
1B51  E656    660     NEXTR:  INC   PTRL
1B53  D0E3    670             BNE   RECV
1B55  E657    680             INC   PTRH
1B57  D0DF    690             BNE   RECV
1B59  20311C  700     ERROR:  JSR   PRERR
1B5C  4C00FC  710             JMP   MONTR
1B5F  20E21B  720    GETBEG:  JSR   Q2MSG
1B62  207D1B  730             JSR   GETADD
1B65  A513    740             LDA   HXPKL
1B67  8556    750             STA   PTRL
1B69  A514    760             LDA   HXPKH
1B6B  8557    770             STA   PTRH
1B6D  60      780             RTS
1B6E  20F81B  790    GETEND:  JSR   Q3MSG
1B71  207D1B  800             JSR   GETADD
1B74  A513    810             LDA   HXPKL
1B76  8558    820             STA   EOFP
1B78  A514    830             LDA   HXPKH
1B7A  8559    840             STA   EOFPH
1B7C  60      850             RTS
1B7D  20FAFD  860    GETADD:  JSR   POLLKB
1B80  A501    870             LDA   ICHAR
1B82  C90D    880             CMP   #$0D
1B84  F006    890             BEQ   GOPACK
1B86  2075FE  900             JSR   OPCHR
1B89  4C7D1B  910             JMP   GETADD
1B8C  A005    920    GOPACK:  LDY   #$05
1B8E  2028FF  930             JSR   HEXPCK
1B91  60      940             RTS
1B92  A91F    950      INIT:   LDA #$1F        ;19.2K baud, 8/N/1
1B94  8DD3BF  960             STA   CONTRL
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1B97  A90B    970            LDA   #$0B ;No P/echo off/rx int off/DTR act low
1B99  8DD2BF  980            STA   COMMND
1B9C  60      990            RTS
1B9D  18      1000   GETCHR:   CLC
1B9E  ADD1BF  1010           LDA   STATUS
1BA1  2908    1020           AND   #$08
1BA3  F004    1030           BEQ   GETCH2
1BA5  ADD0BF  1040           LDA   DATA
1BA8  38      1050           SEC
1BA9  60      1060   GETCH2: RTS
1BAA  48      1070   PUTCHR: PHA
1BAB  ADD1BF  1080   PUTCH1: LDA   STATUS
1BAE  2910    1090           AND   #$10
1BB0  F0F9    1100           BEQ   PUTCH1
1BB2  68      1110           PLA
1BB3  8DD0BF  1120           STA   DATA
1BB6  60      1130           RTS
1BB7  A900    1140   GETBYT:   LDA #0
1BB9  855A    1150           STA   RETRY
1BBB  209D1B  1160   CKLOOP: JSR   GETCHR
1BBE  B009    1170           BCS   GETBY1
1BC0  C65A    1180           DEC   RETRY
1BC2  D0F7    1190           BNE   CKLOOP
1BC4  C65B    1200           DEC   RETRY2
1BC6  D0F3    1210           BNE   CKLOOP
1BC8  18      1220           CLC
1BC9  60      1230   GETBY1: RTS
              1240   TEXT MESSAGES
1BCA  A200    1250    Q1MSG: LDX   #0
1BCC  BDD71B  1260   Q1MSG1: LDA   Q1TXT,X
1BCF  F010    1270           BEQ   Q1MSG2
1BD1  2075FE  1280           JSR   OPCHR
1BD4  E8      1290           INX
1BD5  D0F5    1300           BNE   Q1MSG1
1BD7  0D      1310    Q1TXT: DEFB 13
1BD8  53
1BD9  20
1BDA  4F
1BDB  52
1BDC  20
1BDD  52
1BDE  3F
1BDF  20      1320           DEFM 'S OR R? '
1BE0  00      1330           DEFB 0
1BE1  60      1340   Q1MSG2: RTS
1BE2  A200    1350    Q2MSG: LDX   #0
1BE4  BDEF1B  1360   Q2MSG1: LDA   Q2TXT,X
1BE7  F00E    1370           BEQ   Q2MSG2
1BE9  2075FE  1380           JSR   OPCHR
1BEC  E8      1390           INX
1BED  D0F5    1400           BNE   Q2MSG1
1BEF  0D      1410    Q2TXT: DEFB 13
1BF0  53
1BF1  54
1BF2  41
1BF3  52
1BF4  54
1BF5  3A      1420           DEFM 'START:'
1BF6  00      1430           DEFB 0
1BF7  60      1440   Q2MSG2: RTS
1BF8  A200    1450    Q3MSG: LDX   #0
1BFA  BD051C  1460   Q3MSG1: LDA   Q3TXT,X
1BFD  F00E    1470           BEQ   Q3MSG2
1BFF  2075FE  1480           JSR   OPCHR
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1C02  E8      1490            INX
1C03  D0F5    1500            BNE   Q3MSG1
1C05  0D      1510    Q3TXT:  DEFB 13
1C06  45
1C07  4E
1C08  44
1C09  20
1C0A  20
1C0B  3A      1520            DEFM 'END  :'
1C0C  00      1530            DEFB 0
1C0D  60      1540   Q3MSG2:  RTS
1C0E  A200    1550   PSTART:  LDX   #0
1C10  BD1C1C  1560   PSTAR1:  LDA   MSG,X
1C13  F006    1570            BEQ   PSTAR2
1C15  2075FE  1580            JSR   OPCHR
1C18  E8      1590            INX
1C19  D0F5    1600            BNE   PSTAR1
1C1B  60      1610   PSTAR2:  RTS
1C1C  0D      1620      MSG:  DEFB 13
1C1D  50
1C1E  52
1C1F  45
1C20  53
1C21  53
1C22  20
1C23  4B
1C24  45
1C25  59
1C26  20
1C27  54
1C28  4F
1C29  20
1C2A  42
1C2B  45
1C2C  47
1C2D  49
1C2E  4E      1630            DEFM 'PRESS KEY TO BEGIN'
1C2F  0D
1C30  00      1640            DEFB 13,0
1C31  A200    1650    PRERR:  LDX   #0
1C33  BD3F1C  1660    PERR1:  LDA   ERRMSG,X
1C36  F006    1670            BEQ   PERR2
1C38  2075FE  1680            JSR   OPCHR
1C3B  E8      1690            INX
1C3C  D0F5    1700            BNE   PERR1
1C3E  60      1710    PERR2:  RTS
1C3F  54
1C40  58
1C41  20
1C42  45
1C43  52
1C44  52
1C45  4F
1C46  52      1720   ERRMSG:  DEFM'TX ERROR'
1C47  0D
1C48  00      1730            DEFB 13,0
1C49  A200    1740   PRGOOD:  LDX   #0
1C4B  BD571C  1750   PGOOD1:  LDA   GDMSG,X
1C4E  F006    1760            BEQ   PGOOD2
1C50  2075FE  1770            JSR   OPCHR
1C53  E8      1780            INX
1C54  D0F5    1790            BNE   PGOOD1
1C56  60      1800   PGOOD2:  RTS
1C57  54
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1C58  58
1C59  20
1C5A  53
1C5B  55
1C5C  43
1C5D  43
1C5E  45
1C5F  53
1C60  53      1810    GDMSG:  DEFM'TX SUCCESS'
1C61  0D
1C62  00      1820            DEFB 13,0

No errors.
End of object = $1C63
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