```
                                .Z80            ;This source is for M80.
                                ORG     00100H

                        ;
                        ;       Equates for ASCII control chars
                        ;

0000                    NUL     EQU     000H
0001                    SOH     EQU     001H
0002                    STX     EQU     002H
0003                    ETX     EQU     003H
0004                    EOT     EQU     004H
0005                    ENQ     EQU     005H
0006                    ACK     EQU     006H
0007                    BEL     EQU     007H
0008                    BS      EQU     008H
0009                    TAB     EQU     009H
000A                    LF      EQU     00AH
000B                    VT      EQU     00BH
000C                    FF      EQU     00CH
000D                    CR      EQU     00DH
000E                    SO      EQU     00EH
000F                    SI      EQU     00FH
0010                    DLE     EQU     010H
0011                    XON     EQU     011H
0012                    DC2     EQU     012H
0013                    XOFF    EQU     013H
0014                    DC4     EQU     014H
0015                    NAK     EQU     015H
0016                    SYN     EQU     016H
0017                    ETB     EQU     017H
0018                    CAN     EQU     018H
0019                    EM      EQU     019H
001A                    SUB     EQU     01AH
001B                    ESC     EQU     01BH
001C                    FS      EQU     01CH
001D                    GS      EQU     01DH
001E                    RS      EQU     01EH
001F                    US      EQU     01FH

                        ;
                        ;       External ref equates
                        ;

0000                    IOPORT00H       EQU     00000H
0005                    BDOS    EQU     00005H
0006                    IOPORT06H       EQU     00006H

                        ;
                        ;       End of external equates
                        ;


0100'                   STARTUP:
0100'   11 0245'                LD      DE,INIT_MSG     ;Give intro scre
```

```
0103'  CD 0240'                    CALL    PRINT_STRING

0106'                       GET_BAUD_RATE:
0106'  11 02C8'                    LD      DE,BAUD_PROMPT  ;Ask for baudrat
0109'  CD 0240'                    CALL    PRINT_STRING
010C'  CD 0235'                    CALL    GET_BDOS_KEYPRESS
010F'  FE 0D                       CP      CR              ;RETURN only?
0111'  C2 0116'                    JP      NZ,EDIT_BAUD_RATE ;No, look at k
0114'  3E 36                       LD      A,'6'           ;Yes, use defaul

0116'                       EDIT_BAUD_RATE:
0116'  D6 30                       SUB     '0'             ;Make into binar
0118'  FE 00                       CP      NUL             ;Legal choice?
011A'  DA 0106'                    JP      C,GET_BAUD_RATE ;No, try again
011D'  FE 0A                       CP      LF
011F'  D2 0106'                    JP      NC,GET_BAUD_RATE ;Likewise no, t
0122'  32 0358'                    LD      (BAUD_RATE),A   ;Yes, save it as

0125'                       GET_PARITY_CHOICE:
0125'  11 02EF'                    LD      DE,PARITY_PROMPT ;Give him parit
0128'  CD 0240'                    CALL    PRINT_STRING
012B'  CD 0235'                    CALL    GET_BDOS_KEYPRESS ;Get his respo
012E'  FE 0D                       CP      CR              ;RETURN only?
0130'  C2 0135'                    JP      NZ,EDIT_PARITY_VALUE ;No, edit i
0133'  3E 4E                       LD      A,'N'           ;Yes, use defaul

0135'                       EDIT_PARITY_VALUE:
0135'  FE 45                       CP      'E'             ;Even parity?
0137'  CA 0147'                    JP      Z,PARITY_IS_LEGAL ;Yes, legal
013A'  FE 4F                       CP      'O'             ;Odd parity?
013C'  CA 0147'                    JP      Z,PARITY_IS_LEGAL ;Yes, legal
013F'  FE 4E                       CP      'N'             ;No parity?
0141'  CA 0147'                    JP      Z,PARITY_IS_LEGAL ;Yes, legal
0144'  C3 0125'                    JP      GET_PARITY_CHOICE ;Not legal, so

0147'                       PARITY_IS_LEGAL:
0147'  32 035A'                    LD      (PARITY_CHOICE),A ;Save parity s

014A'                       GET_DATABITS_CHOICE:
014A'  11 0316'                    LD      DE,DATABITS_PROMPT ;Give Databit
014D'  CD 0240'                    CALL    PRINT_STRING
0150'  CD 0235'                    CALL    GET_BDOS_KEYPRESS ;Get response
0153'  FE 0D                       CP      CR              ;RETURN only?
0155'  C2 015A'                    JP      NZ,EDIT_DATABITS_VALUE ;No, use
0158'  3E 38                       LD      A,'8'           ;Yes, use defaul

015A'                       EDIT_DATABITS_VALUE:
015A'  D6 30                       SUB     '0'             ;Make into binar
015C'  FE 07                       CP      BEL             ;Legal choice?
015E'  CA 0169'                    JP      Z,DATABITS_ARE_LEGAL ;Yes, use i
0161'  FE 08                       CP      BS
0163'  CA 0169'                    JP      Z,DATABITS_ARE_LEGAL ;Yes, use i
0166'  C3 014A'                    JP      GET_DATABITS_CHOICE ;No, try aga

0169'                       DATABITS_ARE_LEGAL:
0169'  32 0359'                    LD      (DATABITS),A    ;Save binary dat
```

```
                        ;
                        ; Now convert baudrate choice to binary timer va
                        ;
016C'  3A 0358'                 LD      A,(BAUD_RATE)
016F'  FE 00                    CP      NUL             ;19.2 Kbaud?
0171'  C2 0179'                 JP      NZ,TRY_9600_BAUD ;No
0174'  3E 0F                    LD      A,SI            ;Yes, use timer
0176'  C3 01B7'                 JP      DONE_EDITING_BAUD

0179'                   TRY_9600_BAUD:
0179'  FE 01                    CP      SOH             ;9600 baud?
017B'  C2 0183'                 JP      NZ,TRY_4800_BAUD ;No
017E'  3E 0E                    LD      A,SO            ;Yes, use timer
0180'  C3 01B7'                 JP      DONE_EDITING_BAUD

0183'                   TRY_4800_BAUD:
0183'  FE 02                    CP      STX             ;4800 baud?
0185'  C2 018D'                 JP      NZ,TRY_2400_BAUD ;No
0188'  3E 0C                    LD      A,FF            ;Yes, use timer
018A'  C3 01B7'                 JP      DONE_EDITING_BAUD

018D'                   TRY_2400_BAUD:
018D'  FE 03                    CP      ETX             ;2400 baud?
018F'  C2 0197'                 JP      NZ,TRY_1200_BAUD ;No
0192'  3E 0A                    LD      A,LF            ;Yes, use timer
0194'  C3 01B7'                 JP      DONE_EDITING_BAUD

0197'                   TRY_1200_BAUD:
0197'  FE 04                    CP      EOT             ;1200 baud?
0199'  C2 01A1'                 JP      NZ,TRY_600_BAUD ;No
019C'  3E 07                    LD      A,BEL           ;Yes, use value
019E'  C3 01B7'                 JP      DONE_EDITING_BAUD

01A1'                   TRY_600_BAUD:
01A1'  FE 05                    CP      ENQ             ;600 baud?
01A3'  C2 01AB'                 JP      NZ,TRY_300_BAUD ;No
01A6'  3E 06                    LD      A,ACK           ;Yes, use timer
01A8'  C3 01B7'                 JP      DONE_EDITING_BAUD

01AB'                   TRY_300_BAUD:
01AB'  FE 06                    CP      ACK             ;300 baud?
01AD'  C2 01B5'                 JP      NZ,ASSUME_110_BAUD
01B0'  3E 05                    LD      A,ENQ           ;Yes, use timer
01B2'  C3 01B7'                 JP      DONE_EDITING_BAUD

01B5'                   ASSUME_110_BAUD:
01B5'  3E 02                    LD      A,STX           ;Use timer value

01B7'                   DONE_EDITING_BAUD:
01B7'  32 0358'                 LD      (BAUD_RATE),A   ;Save final time

                        ;
                        ; Now convert parity selection to proper control
                        ;
01BA'  3A 035A'                 LD      A,(PARITY_CHOICE)
```

```
01BD'  FE 45                    CP      'E'             ;Even parity?
01BF'  C2 01C7'                 JP      NZ,TRY_ODD_PARITY ;No
01C2'  3E 03                    LD      A,ETX           ;Yes, use bit pa
01C4'  C3 01D3'                 JP      HAVE_GOOD_PARITY_BITMAP

01C7'                       TRY_ODD_PARITY:
01C7'  FE 4F                    CP      'O'             ;Odd parity?
01C9'  C2 01D1'                 JP      NZ,ASSUME_NO_PARITY ;No
01CC'  3E 01                    LD      A,SOH           ;Yes, use bit pa
01CE'  C3 01D3'                 JP      HAVE_GOOD_PARITY_BITMAP

01D1'                       ASSUME_NO_PARITY:
01D1'  3E 00                    LD      A,NUL           ;Use bit pattern

01D3'                       HAVE_GOOD_PARITY_BITMAP:
01D3'  32 035A'                 LD      (PARITY_CHOICE),A ;Save final SI

                            ;
                            ; Edit databits (binary 7 or 8)
                            ; to create proper SIO bit pattern
                            ;
01D6'  3A 0359'                 LD      A,(DATABITS)
01D9'  FE 07                    CP      BEL             ;7 data bits?
01DB'  CA 01EB'                 JP      Z,SET_7_DATABIT_PATTERN ;Yes
01DE'  3E 60                    LD      A,'`'           ;No, use SIO WR5
01E0'  32 035B'                 LD      (SIO_WR5_TX_BITS),A ;Save to be
01E3'  3E C0                    LD      A,'@'+80H       ;Format 8 Rx dat
01E5'  32 035C'                 LD      (SIO_WR3_RX_BITS),A
01E8'  C3 01F5'                 JP      SEND_ALL_TO_SIO

01EB'                       SET_7_DATABIT_PATTERN:
01EB'  3E 20                    LD      A,' '           ;Set bit pattern
01ED'  32 035B'                 LD      (SIO_WR5_TX_BITS),A
01F0'  3E 40                    LD      A,'@'           ;Ditto for 7 Rx
01F2'  32 035C'                 LD      (SIO_WR3_RX_BITS),A

01F5'                       SEND_ALL_TO_SIO:

                            ;
                            ; OK, so send everything to SIO
                            ;
01F5'  F3                       DI
01F6'  3E 18                    LD      A,CAN           ;Reset SIO
01F8'  D3 06                    OUT     (IOPORT06H),A
01FA'  D3 06                    OUT     (IOPORT06H),A
01FC'  3E 01                    LD      A,SOH           ;Select SIO Writ
01FE'  D3 06                    OUT     (IOPORT06H),A
0200'  AF                       XOR     A               ;No SIO interrup
0201'  D3 06                    OUT     (IOPORT06H),A
0203'  3E 04                    LD      A,EOT           ;Select SIO Writ
0205'  D3 06                    OUT     (IOPORT06H),A
0207'  3A 035A'                 LD      A,(PARITY_CHOICE) ;Get parity bi
020A'  C6 44                    ADD     A,'D'           ;Add 'Clock x 16
020C'  D3 06                    OUT     (IOPORT06H),A
020E'  3E 03                    LD      A,ETX           ;Select SIO Writ
0210'  D3 06                    OUT     (IOPORT06H),A
```

```
0212'  3A 035C'                    LD      A,(SIO_WR3_RX_BITS)
0215'  C6 01                       ADD     A,SOH           ;Enable Receiver
0217'  D3 06                       OUT     (IOPORT06H),A
0219'  3E 05                       LD      A,ENQ           ;Select SIO Writ
021B'  D3 06                       OUT     (IOPORT06H),A
021D'  3A 035B'                    LD      A,(SIO_WR5_TX_BITS)
0220'  C6 8A                       ADD     A,LF+80H        ;Add 'DTR' and '
0222'  D3 06                       OUT     (IOPORT06H),A
0224'  3E 47                       LD      A,'G'           ;Reset Baud Rate
0226'  D3 00                       OUT     (IOPORT00H),A
0228'  3A 0358'                    LD      A,(BAUD_RATE)   ;Set our Baud Ra
022B'  D3 00                       OUT     (IOPORT00H),A
022D'  FB                          EI
022E'  11 033D'                    LD      DE,WRAPUP_MSG   ;Tell him that w
0231'  CD 0240'                    CALL    PRINT_STRING
0234'  C9                          RET                     ;Back to CP/M

0235'                      GET_BDOS_KEYPRESS:

                           ;
                           ; Return next keypress as Uppercase char in A-re
                           ;
0235'  0E 01                       LD      C,SOH
0237'  CD 0005                     CALL    BDOS            ;Use BDOS to get
023A'  FE 60                       CP      '`'             ;Is it lowercase
023C'  D8                          RET     C               ;No, return it a
023D'  D6 20                       SUB     ' '             ;Yes, convert to
023F'  C9                          RET

0240'                      PRINT_STRING:

                           ;
                           ; Print $-terminated string at (DE)
                           ;
0240'  0E 09                       LD      C,TAB
0242'  C3 0005                     JP      BDOS

0245'                      INIT_MSG:
0245'  1A 49 4E 49                 DB      SUB,"INIT 1.0 for Xerox 820",CR,
0249'  54 20 31 2E
024D'  30 20 66 6F
0251'  72 20 58 65
0255'  72 6F 78 20
0259'  38 32 30 0D
025D'  0A 0A 0A 0D
0261'  0A

0262'  42 61 75 64                 DB      "Baud Rates:",CR,LF,"19200 = 0",
0266'  20 52 61 74
026A'  65 73 3A 0D
026E'  0A 31 39 32
0272'  30 30 20 3D
0276'  20 30 0D 0A
027A'  39 36 30 30
027E'  20 20 3D
```

```
0281'  20 31 0D 0A                  DB      " 1",CR,LF,"4800  = 2",CR,LF,"24
0285'  34 38 30 30
0289'  20 20 3D 20
028D'  32 0D 0A 32
0291'  34 30 30 20
0295'  20 3D 20 33
0299'  0D 0A

029B'  31 32 30 30                  DB      "1200  = 4",CR,LF," 600  = 5",CR
029F'  20 20 3D 20
02A3'  34 0D 0A 20
02A7'  36 30 30 20
02AB'  20 3D 20 35
02AF'  0D 0A 20 33
02B3'  30 30 20 20
02B7'  3D 20 36

02BA'  0D 0A 20 31                  DB      CR,LF," 110  = 7",CR,LF,"$"
02BE'  31 30 20 20
02C2'  3D 20 37 0D
02C6'  0A 24


02C8'                       BAUD_PROMPT:
02C8'  0D 0A 53 65                  DB      CR,LF,"Select baud rate
02CC'  6C 65 63 74
02D0'  20 62 61 75
02D4'  64 20 72 61
02D8'  74 65 20 20
02DC'  20 20 20 20
02E0'  20 20 20 20
02E4'  20 28 31 2D
02E8'  39 29 3A 20
02EC'  36 08

02EE'  24                           DB      "$"


02EF'                       PARITY_PROMPT:
02EF'  0D 0A 53 65                  DB      CR,LF,"Select parity  (Odd, Even
02F3'  6C 65 63 74
02F7'  20 70 61 72
02FB'  69 74 79 20
02FF'  20 28 4F 64
0303'  64 2C 20 45
0307'  76 65 6E 2C
030B'  20 4E 6F 6E
030F'  65 29 3A 20
0313'  4E 08

0315'  24                           DB      "$"


0316'                       DATABITS_PROMPT:
0316'  0D 0A 53 65                  DB      CR,LF,"Select word length      (
031A'  6C 65 63 74
```

```
031E'   20 77 6F 72
0322'   64 20 6C 65
0326'   6E 67 74 68
032A'   20 20 20 20
032E'   20 20 28 37
0332'   20 6F 72 20
0336'   38 29 3A 20
033A'   38 08

033C'   24                          DB      "$"


033D'                       WRAPUP_MSG:
033D'   0D 0A 43 6F                DB      CR,LF,"Communications port set.$
0341'   6D 6D 75 6E
0345'   69 63 61 74
0349'   69 6F 6E 73
034D'   20 70 6F 72
0351'   74 20 73 65
0355'   74 2E 24


0358'                       BAUD_RATE:
0358'   00                          DB      NUL


0359'                       DATABITS:
0359'   00                          DB      NUL


035A'                       PARITY_CHOICE:
035A'   00                          DB      NUL


035B'                       SIO_WR5_TX_BITS:
035B'   00                          DB      NUL


035C'                       SIO_WR3_RX_BITS:
035C'   00 00 00 00                DB      NUL,NUL,NUL,NUL,NUL
0360'   00
```

Macros:

Symbols:

0006	ACK	01B5'	ASSUME_110_BAUD	01D1'	ASSUME_NO_PARITY
02C8'	BAUD_PROMPT	0358'	BAUD_RATE	0005	BDOS
0007	BEL	0008	BS	0018	CAN
000D	CR	0359'	DATABITS	0169'	DATABITS_ARE_LEG
0316'	DATABITS_PROMPT	0012	DC2	0014	DC4
0010	DLE	01B7'	DONE_EDITING_BAU	0116'	EDIT_BAUD_RATE
015A'	EDIT_DATABITS_VA	0135'	EDIT_PARITY_VALU	0019	EM
0005	ENQ	0004	EOT	001B	ESC
0017	ETB	0003	ETX	000C	FF
001C	FS	0106'	GET_BAUD_RATE	0235'	GET_BDOS_KEYPRES
014A'	GET_DATABITS_CHO	0125'	GET_PARITY_CHOIC	001D	GS
01D3'	HAVE_GOOD_PARITY	0245'	INIT_MSG	0000	IOPORT00H
0006	IOPORT06H	000A	LF	0015	NAK
0000	NUL	035A'	PARITY_CHOICE	0147'	PARITY_IS_LEGAL
02EF'	PARITY_PROMPT	0240'	PRINT_STRING	001E	RS
01F5'	SEND_ALL_TO_SIO	01EB'	SET_7_DATABIT_PA	000F	SI
035C'	SIO_WR3_RX_BITS	035B'	SIO_WR5_TX_BITS	000E	SO
0001	SOH	0100'	STARTUP	0002	STX
001A	SUB	0016	SYN	0009	TAB
0197'	TRY_1200_BAUD	018D'	TRY_2400_BAUD	01AB'	TRY_300_BAUD
0183'	TRY_4800_BAUD	01A1'	TRY_600_BAUD	0179'	TRY_9600_BAUD
01C7'	TRY_ODD_PARITY	001F	US	000B	VT
033D'	WRAPUP_MSG	0013	XOFF	0011	XON

No Fatal error(s)