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Z-DOS v4 CONFIGUR.COM Documentation

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Z-DOS v4 CONFIGUR.COM

Introduction

The Z-100 Series Desktop Computer may be connected to many different types of printers, modems, and other devices which make use of either a Centronics parallel signal or RS-232 serial signals.

This article will show you how to use the Z-DOS v4 version of the CONFIGUR utility to customize your Z-100 Operating System for use with different devices.

Note: Never mix DOS utilities from different DOS versions. This version of CONFIGUR cannot be used with earlier DOS versions.

CONFIGUR will guide you through each phase of selecting the necessary operating conditions for your computer when it is used with printers, modems, and other devices.

While older versions of CONFIGUR also configured disk drives, Z-DOS v4 has a separate utility, DRIVECFG.COM, to handle this important task.

If you are going to use a printer or device peripheral, you will need to know the type of interface (parallel or serial) and other details of the device's operation. Table 1. provides a list of devices directly supported by CONFIGUR.

Note: Most parallel devices using a centronics-type interface are supported by this configuration without further modification. However, some parallel devices may require special communications protocol not supported by the Z-100.

If your peripheral is not listed in the table, you will need to determine whether it can be configured to match one of the devices listed. Otherwise, determine the type of interface (parallel or serial) you will be using and, if you are using a peripheral that requires serial communications, you will need to know the baud rate, parity status, number of stop bits, word length, and handshaking information.

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**Table 1. Devices Directly Supported by CONFIGUR**  
=====

| <u>PARALLEL OR SERIAL</u> | <u>DEVICE NAME AND MODEL</u>  | <u>COMMUNICATIONS PROTOCOL</u>     |
|---------------------------|-------------------------------|------------------------------------|
| Parallel                  | Most Parallel Printers        | Centronics-type parallel interface |
| Serial                    | QUME Sprint 11                | 4800 baud, DTR positive (pin 20)   |
| Serial                    | Epson MX-80                   | 4800 baud, DTR positive (pin 20)   |
| Serial                    | H/Z-25 and H/Z-125            | 4800 baud, RTS positive (pin 4)    |
| Serial                    | H-14 and WH-24                | 4800 baud, RTS positive (pin 4)    |
| Serial                    | Diablo 630 and 1640           | 1200 baud, ETX/ACK                 |
| Serial                    | Diablo 620                    | 300 baud, ETX/ACK                  |
| Serial                    | H/Z WH-23, WH-33, WH-34 modem | 300 baud, no handshaking           |
| Serial                    | H/Z WH-12 Votrax Type-N-Talk  | 4800 baud, RTS positive (pin 4)    |

~~~~~

Note: Some peripherals may require the fabrication of custom cables for proper operation.

Note: This CONFIGUR utility uses logical device names, AUX, CON, COM1, and PRN to establish both the physical device and the transfer characteristics that DOS will use for communication to each logical device. These logical devices should not be confused with the physical ports of a PC-compatible computer. Any of the Z-100's logical devices could be configured to perform any of the functions available in the CONFIGUR.COM menus.

Printer Configuration

Many of the printers that can be connected to your computer have switches that can be used to adapt the printer to different computers. This flexibility can make it appear that the printer or computer is malfunctioning when, in fact, both are operating correctly.

In order to simplify printer and computer configuration, you should first consult your printer's documentation and configure it to match the operating characteristics of one of the printers listed in Table 1 and then use the CONFIGUR utility to match the computer to the printer you selected.

If the printer cannot be matched with one of the printers listed in the table, or if you want to use other operating characteristics (perhaps to improve performance while being used as a serial device), then you should first configure the printer and then match the characteristics you have selected with the User-defined option of CONFIGUR.

DISPLAY 1:

```
~~~~~  
                                CONFIGUR version 4.06  
                                Copyright(C) 1986 Zenith Data Systems Corporation  
  
                                Change Memory or Disk Image of I/O Ports and Queues  
  
                                This program provides the ability to configure the ports for the logical  
                                devices and their buffers. Because changing the size of a buffer changes the  
                                size of IO.SYS, changing the memory image of the buffers is not permitted. If  
                                the disk buffer sizes are changed, the computer MUST be re-booted to  
                                incorporate the changes.  
  
                                To configure a temporary Memory image of the logical 'AUX', 'CON', 'COM1', and  
                                'PRN' devices, Select 'M'.  
  
                                To configure the disk image of the logical 'AUX', 'CON', 'COM1', and 'PRN'  
                                devices, and/or to change the disk image of the Keyboard input buffer, Serial  
                                ports A and B input and output buffers, and the Parallel port output buffer,  
                                Select 'D'.  
  
                                To view the Current Memory/Disk Parameters, Select 'P'.  
                                Select 'HELP', '?', or 'H' key for more Information.  
                                To Exit back to MS-DOS, Select 'E'.  
  
                                Select <HELP>, <M>emory, <D>isk, <P>arameters, or <E>xit...  
~~~~~
```

To configure your printer, consult the printer's documentation for setting the popular switches. Then, after you have set the printer, run the CONFIGUR utility to set the computer output characteristics to match that which you have selected for your printer.

The CONFIGUR.COM Utility

When you invoke CONFIGUR, it assumes you want to modify IO.SYS, unless you pass an alternate file name on the command line. Each of the different scenarios are listed below:

- 1) CONFIGUR alone, assumes IO.SYS in the default drive and directory.
- 2) CONFIGUR with a drive letter and colon, assumes IO.SYS in the default directory on that drive.
- 3) CONFIGUR with a path, assumes IO.SYS on the default drive.
- 4) CONFIGUR with drive letter and directory, assumes IO.SYS in that location.
- 5) CONFIGUR with a filename, assumes default drive and directory.
- 6) CONFIGUR with drive and filename, assumes the default directory on that drive.
- 7) CONFIGUR with path and filename, assumes the default drive.
- 8) CONFIGUR with drive, path, and filename, assumes nothing.

Of course, the filename specified can also be IO.SYS. If an attempt to open the file on the command line according to rule 8 above fails, the user will be prompted for a filename. The string obtained from the user will then be processed according to the conditions above.

When CONFIGUR begins, the opening screen is DISPLAY 1.

The CONFIGUR utility makes use of menus and displays with appropriate instructions to guide you to the proper display according to your selection. The *Italicized* text is what the computer displays on the screen.

PRN, AUX, CON, and COM1 are MS-DOS **logical** device names. While they are generally used per the following convention, **ANY** of the logical devices can be configured to perform the functions of another.

The **PRN** device is for your printer, which may require serial or parallel signals.

The **AUX** device is for serial communications, which may include a second printer or other peripheral.

The **CON** device may be routed to a remote display or printing terminal, providing remote control of the computer.

The **COM1** device is like the AUX device and is primarily used for a serial printer.

All of this is further explained within the utility's help screens. Pressing the {**HELP**} key brings up DISPLAY 2.

DISPLAY 2:

~~~~~

### CONFIGUR v4.06 for H/Z-100 Computers

*From the Command Line, CONFIGUR recognizes 3 switches and/or a fully unambiguous reference to a file (Filespec).*

*CONFIGUR [/?] [/P] [/I] [Filespec] [/P] [/I].*

*/? or /H = Displays the HELP screens. (This screen.)*

*/p or /P = Displays the current memory parameter screen, or if included with Filespec, the current parameters of the specified disk file.*

*/i or /I = Tells CONFIGUR to Ignore initialization errors.*

*Filespec = [Drive:] [\Path\] [Filename].*

*Drive: = Any valid MS-DOS drive letter followed by a ":".*

*\Path\ = Any unique directory on the default drive or the designated Drive. "." and ".." will be correctly resolved.*

*Filename = Any valid MS-DOS Filename.Extension. If only Drive and/or Path is given, "IO.SYS" will be appended to filespec.*

**WILDCARDS are NOT permitted in Filename.**

*Press RETURN to exit, or press any other key to display the next page...*

~~~~~

CONFIGUR v4.06 for H/Z-100 Computers

The 'SAVE TO DISK AND MEMORY' Option was removed from the version 4 CONFIGUR.

We now provide the ability to configure any BIOS file (default = IO.SYS) on any drive (default = current default drive), in any directory (default = the current directory).

When a disk file is specified, we read in the current disk values, which overwrites any previously selected values. This precludes the ability to save the previously selected Memory values to Disk or to save selected values to multiple disks.

When <P>arameters is selected from the main screen, the Previously selected <D>isk or <M>emory(default) parameters will be displayed.

I/O Redirection to a file or a printer is NOT supported, because of cursor control escape sequences, unless the "/I"gnore switch is used.

CONFIGUR does not work on BIOS files that have been "PKLITED".

Press RETURN to exit, or Press any other key to display the next page...

~~~~~  
CONFIGUR v4.06 for H/Z-100 Computers

CONFIGUR allows you to establish both the physical device and the transfer characteristics that MS-DOS will use for communication to each logical device.

PRN, AUX, CON and COM1 are MS-DOS logical device names.

All MS-DOS logical devices may be mapped to any BIOS physical device.

The PRN device is primarily used for a printer that may be connected to the Serial A (J1), Serial B (J2), or the Parallel (J3) port connector on the rear panel.

The AUX device is an auxiliary device (such as a modem, a mouse, or a terminal (i.e., H-19)), though AUX may be configured for a printer. It is usually connected to the Serial B (J2) port connector on the rear panel.

The CON device is the system console. It is usually connected to the internal Video and Keyboard (System CRT), but can be mapped to a terminal.

The COM1 device is like the AUX device and is primarily used for a serial printer, that is usually connected to the Serial A (J1) port connector.

Data may be written (sent) to the Parallel (J3) port and read (received) from or written to the System CRT and the Serial ports (J1 and J2).

The Parallel output, Serial A and B input and output, and Keyboard input Buffer (queue) sizes are now user configurable (16 - 65,521 bytes each).

To change the configuration of the disk drives, run "DRIVECFG.COM".

Press RETURN to continue...

~~~~~

This returns us to the initial CONFIGUR screen, DISPLAY 1.

At this point, you could exit the program without making any changes to the configuration of your system. Do this by pressing the {E} key. The program would halt and we would be returned to the DOS prompt. Also, remember that you can **exit** CONFIGUR at any time - **without** the danger of changing your present configuration.

But, let's discuss the other options available at the bottom of Display 1; <P>arameters, <M>emory, and <D>isk. These are new and take some additional explanation.

One of our efforts throughout our work on Z-DOS version 4 has been to take full control of every configurable aspect of the Z-100 - from fonts to line spacing to screen colors.

<M>emory and <D>isk took the place of the Save to Disk question in the previous versions that only configured the IO.SYS in the root directory in the previous versions.

This version expanded this question into a menu item to allow much greater control over where the file to be modified is located. It also affects some menu items.

Selecting <P>arameters displays a three page summary of all the Z-100's parameters that can be configured.

DISPLAY 25 shows the current settings of the BIOS file parameters for all the logical devices in a table. To change any of these, follow the "Logical Device Configuration" procedures, described next.

DISPLAY 26 shows the setting of each parameter that can be modified on our console device. These are changed during the CON logical device configuration procedures.

And DISPLAY 27 shows the settings for the input/output buffers and a table mapping the hardware to the logical devices. Depending upon if the <M>emory option or <D>isk option was selected, the buffers can be configured from the DISPLAY 4 menu by selecting "E. Configure a buffer" (<D>isk option only).

Logical Device Configuration

Selecting <M>emory from DISPLAY 1 permits us to make a temporary memory image of the logical device configuration for use during this computer session only. A copy of this configuration is NOT saved to disk, so once the computer is rebooted, this configuration is lost - great for trial testing of a particular configuration.

When you select <M>emory, the computer begins the configuration process with DISPLAY 4.

Selecting <D>isk from DISPLAY 1 permits us to make permanent changes to a disk version of the BIOS - a copy of "IO.SYS" on any disk or device. However, the changes do not actually take place until this configuration session is completed, the changes are saved to disk, and the computer is rebooted.

When you select <D>isk, the computer begins the configuration process by displaying four additional lines below the initial DISPLAY 1 screen. These are presented in DISPLAY 3.

DISPLAY 3:

```
~~~~~  
Please input [Drive:][\Path][\Filename] of the BIOS disk file to configure.  
Default name = 'IO.SYS'. PATH & APPEND Dir's not searched, '.' & '..' are valid.  
<F3> = Previous file or "IO.SYS" in the ROOT directory of the default drive.  
<CR> = "IO.SYS" in the CURRENT directory of the default drive.  
~~~~~
```

These lines in DISPLAY 3 define where to find the BIOS (IO.SYS) file that we wish to configure. The file to be modified could be located in any directory of any of our drives or other storage devices (e.g., RAM Disk).

Pressing {F3} will display the previous file or the "IO.SYS" in the root directory of the default drive. You can modify this line by typing over the entry displayed from {F3}, or accept this entry by pressing {RETURN}.

After defining the IO.SYS to be used, the computer begins the configuration session with DISPLAY 4, the primary display that you will see often. It will reflect the current changes that have been made as the session progresses.

DISPLAY 4, as shown, reflects the wording if the <M>emory option were selected from DISPLAY 1. There are two primary changes if you had selected the <D>isk option:

* First, instead of the phrase "Modifying MEMORY image of the BIOS." on line 8, the display will report:

"Modifying BIOS file on DRIVE:"

followed by the drive, path, and filename, of the BIOS to be modified.

* Second, where selection E of DISPLAY 4 presently reads "E. Review Queue Sizes",

"E. Configure a Buffer"

will now be displayed. This is important.

If "E. Review Queue Sizes" (<M>emory option) were selected, you would be directed to DISPLAY 22 and could review the input/output buffer settings.

If "E. Configure a Buffer" (<D>isk option) were selected, you could review and **modify** the input/output buffer settings.

This is new to us, so let's discuss it a bit more.

The input/output buffers are attached to the ports: Keyboard (in only), Serial A, Serial B, and Parallel (out only), and are only configurable by CONFIGUR. These buffers did not exist in version 2 of DOS or the BIOS. And in version 3.1, they were only 1-byte in size!

Transferring data into a buffer, then out again, one byte at a time is very inefficient. So, one of the biggest reasons that they were made configurable is that BIOS was not able to keep up with a constant stream of bytes, forcing programs to trap the hardware interrupts to make things like mice and modems work at faster transfer rates.

Now the user can select how much memory to reserve for holding either incoming or outgoing data. The buffer size can be set to any size from 16 to 65,521 bytes. The maximum is a full 64K segment because our buffers in BIOS are set up with that limitation in Zenith's design.

The only disadvantage to setting the buffer size is that the memory set is then reserved exclusively for each port and that limits the memory available for other processes in the Z-100.

While the first Z-100 was configured with 64k, 128k, or 192k of memory, the 768k of the newer Z-100 can certainly handle the increased memory demand.

In brief, the simple reason for setting the buffers is so that the BIOS can store bytes until the user or hardware has the time to process them without making everything else wait.

Configuring a Logical Device

As you can see, CONFIGUR has grown considerably, in function and capability, with this version.

Now that we've covered the background, let's begin a configuration session. Press {M} for the <M>emory option from DISPLAY 1. The computer will show DISPLAY 4.

DISPLAY 4 is like a home page. We will be coming back to it many times, as we configure each of the logical devices.

DISPLAY 4:

```

~~~~~
                        CONFIGUR version 4.06
                Copyright(C) 1986 Zenith Data Systems Corporation

                Use one of the following options to configure a device.

                Serial port A = J1, Serial port B = J2, Parallel port = J3.

                Modifying MEMORY image of the BIOS.

                Options                Current Settings

                A. Configure PRN device  (Parallel,PIA CBl 0 -> 1 (positive) transition)
                B. Configure AUX device  (J2,9600,None,1 Stop Bit,8 Bit Word)
                C. Configure CON device  (System CRT)
                D. Configure COM1 device (J1,9600,None,1 Stop Bit,8 Bit Word)

                E. Review Queue Sizes

                F. Exit with no changes

                Enter your selection (A-F):
~~~~~

```

DISPLAY 4 shows a lot of information. In addition to identifying the back panel connector for each port, it reports that we are "Modifying MEMORY image of the BIOS".

It shows the current setting of each of the logical devices and gives us the option of changing any of these settings, reviewing the Queue (buffer) sizes, or exiting without changes.

Note: As mentioned earlier, any logical device name can be configured to perform any of the functions available for configuration. Therefore, DISPLAY 5 is essentially the same for each device.

[] To configure the PRN (printer) device, the AUX (auxiliary) input/output device, the CON (console) device, or the COM1 (communications) device, press the corresponding letter, {A}, {B}, {C}, or {D} and proceed to DISPLAY 5.

[] To review/change the Queue buffer sizes, press {E} and proceed to either DISPLAY 22 or DISPLAY 23, depending upon whether <M>emory or <D>isk was selected earlier.

[] To EXIT without changes, press {F}.

Note: Configuring the AUX device changes the Serial Port used in DISPLAY 5 from Port A (J1) to Port B (J2). Because J1 is a DCE (male DB-25 connector) and J2 is a DTE (female DB-25 connector), the NOTE changes to reflect that "Options A thru F and H may require a special cable."

In DISPLAY 5, entering the letter for a device capable of displaying a screen, will add a question at the bottom of the screen:

```

                Do you want this device to be the
                Print Screen Device? [Y/N] <N>

```

with 'No' being the default answer. Once this question is answered, the computer displays a graphic of the Z-100's rear panel with the appropriate connector pointed out to show where to connect your printer.

Pressing {RETURN} to continue, you are sent back to DISPLAY 4, but which will now reflect the new PRN device.

If you had chosen the device letter 'G' or 'J', the extra question isn't asked and the rear panel graphic, DISPLAY 20 or 21, is immediately displayed.

If you had chosen the device letter 'K' for the System CRT, then you are immediately sent back to DISPLAY 4, except that now the new line A. reads:

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                "A. Configure PRN device      (System CRT)".

```

If you had chosen the device letter 'L' for selecting a User defined device, then you are sent to DISPLAY 6.

DISPLAY 5:

Use one of the following options to select the PRN (AUX, CON, or COM1) device.

PARALLEL DEVICES:

A. Centronics, Diablo 630, or MX-80 (Parallel,PIA CBI 0 -> 1 Pos. Trans)

SERIAL DEVICES:

B. QUME Sprint 11/MX-80 Serial (Serial A(J1), 4800 baud, DTR Pos. (pin 20))

C. H/Z-25 (Serial A(J1), 4800 baud, RTS Pos. (pin 4))

D. H-14/WH-24 (Serial A(J1), 4800 baud, RTS Neg. (pin 4))

E. Diablo 630/1640 (Serial A(J1), 1200 baud, ETX/ACK)

F. Diablo 620 (Serial A(J1), 300 baud, ETX/ACK)

G. WH-23/WH-33/WH-43 modem (Serial A(J1), 300 baud, No handshake)

H. WH-12 Votrax Type-N-Talk (Serial A(J1), 4800 baud, RTS Pos. (pin 4))

I. H/Z-19, H/Z-29, H/Z-39 Terminal (Serial A(J1), 9600 baud, DC1/DC3)

J. Mouse (Serial A(J1), 9600 baud, No handshake)

K. System CRT

L. User defined

M. Exit with no changes

Note: Option G may require a special cable.

Enter selection (A-M):

DISPLAY 6:

Valid options for a device type are:

- A. System CRT
- B. Serial device
- C. Parallel device

Enter your device type:

Usually your answer for this question will be the same as for the previous one. After you press the appropriate key, the computer will display the following line:

Map lowercase to uppercase on input?
(Y/N) <N>

Some software and devices are incapable of utilizing lowercase characters. This question allows you to change all lowercase coming into the system to uppercase automatically.

If you want lowercase characters converted to uppercase, press the {Y} key. Otherwise, press the {N} or {RETURN} key. The computer will display the following line:

Map lowercase to uppercase on output?
(Y/N) <N>

This gives you the ability to convert lowercase characters to uppercase characters before they are transmitted. Press the {Y} key if you want to do this. Otherwise, press the {N} or {RETURN} key.

[] Remember your choice. The computer continues with the following display:

DISPLAY 7:

Answer the following questions with Y for Yes and N for No.

Strip parity on input? (Y/N) <N>

Parity checking is used throughout your computer. If you do not want parity checking on input, press either the {N} or {RETURN} keys. Otherwise, press {Y}.

The computer will now display the following line:

Strip parity on output? (Y/N) <N>

[] If you had selected the System CRT at DISPLAY 6, proceed to DISPLAY 11.

[] If you had selected the Serial device at DISPLAY 6, proceed to DISPLAY 13.

[] If you had selected the Parallel device at DISPLAY 6, then the computer continues with DISPLAY 8.

DISPLAY 8:

~~~~~  
Parallel Printer ACKnowLedGe Signal Polarity  
(PIA 6821 CBI).

Does your parallel device have an ACKLG  
signal with a

- A. Positive transition (0 -> 1),
- B. Negative transition (1 -> 0):

~~~~~  
The ACKLG signal is used by the BIOS to send a
printer interrupt to control the flow of char-
acters from the printer buffer to the printer.
While the interrupt has always been present in
earlier versions of DOS, its use is new in
Z-DOS v4, with the implementation of several
input/output buffers.

These buffers speed printer operation by
returning us to DOS immediately after the print
document has been sent to the buffer. Printing
from the buffer will continue in the background.

When you respond with an 'A' or 'B', the
computer continues with DISPLAY 9.

DISPLAY 9:

~~~~~  
Device type choices are as follows:

- A. Printer
- B. Modem
- C. Terminal
- D. Mouse
- E. Joy Stick
- F. Digitizer
- G. Plotter
- H. Scanner
- I. Other Devices  
(cannot be combined)
- J. Exit with no other selections

Current selected devices are: I

Please select type of device(s) connected  
to this port (A-J):

~~~~~  
As you respond with the letter of each device,
the "Current selected devices are:" line is
updated, such as: D for mouse & E for joystick.

When you respond with a 'J', the questions
continue with DISPLAY 10.

DISPLAY 10:

~~~~~  
Does this device support Zenith Escape  
Sequences ?[Y/N] <N>

Does this device support ANSI Escape  
Sequences ?[Y/N] <N>

Does this device support Bi-directional  
Communication ?[Y/N] <N>

If you are configuring a serial device with  
ETX/ACK handshaking, you are asked one  
additional question:

Number of characters between the ETX/ACK  
handshake (0-255) (CR = 0) <0>:

~~~~~  
After responding to these, we are taken to
DISPLAY 12.

DISPLAY 11:

~~~~~  
Single, Double or Old Font? [S/D/O] <S>

Beginning with the version 4 MTR-ROMs, all three  
fonts have been installed in the ROM chip and  
are selectable here in CONFIGUR or from the  
DRIVECFG.COM screen.

The **Old font** is the familiar Zenith 127 char-  
acter single dot default font, with the original  
H/Z-19 graphics characters.

The **Double dot font** is the IBM 256 character set  
with double dot print.

The new **Single dot font** includes an entire 256  
character set, of which the Old font is a  
subset.

Once the font is selected, the computer  
continues with:

Enter number of Lines Per Screen  
[16-50] <25>

Also beginning with the version 4 MTR-ROMs, the  
screen is able to display up to 50 lines of  
characters. The old Zenith default screen is 24  
lines, with an additional status line. The PC-  
type screen displays 25 lines. The default in  
Z-DOS version 4 is also 25 lines, with an  
additional status line.

**Note:** Lines per screen of greater than 26 are  
displayed in interlaced mode and have a shrunken  
appearance.

Enter Foreground Color [0-7] <7>

We are now able to select a default screen  
color. The default is 7, White.

Enter Background Color [0-7] <0>

The default background color is 0, Black.

Does this device support ANSI Escape  
Sequences? [Y/N] <N>

~~~~~  
We are now returned to DISPLAY 4.

DISPLAY 12:

~~~~~  
If you do not want a pad character, simply press the RETURN key, otherwise enter the number of pad characters to send (0 - 255) (CR = 0) <0>:

If you do not wish a pad character, simply strike the {RETURN} key, and then enter a zero as the number of pad characters.

Now select the actual key corresponding to your desired pad character:

Pad characters are added to allow extra time for a device to respond to a command. For instance, blank characters (pad characters) are sent following a LINE FEED to allow a printer to properly position its print head to the beginning of the next line.

Not all devices require pad characters. Refer to your printer's documentation.

- [ ] To use this feature, press the key which corresponds to the character which precedes the required pad characters. In most cases, this will be the {LINE FEED} or {RETURN} key.
- [ ] If you do not need or want to use this feature, press the {RETURN} key.
- [ ] Enter a number between 0 and 255 which corresponds to the number of characters that must be transmitted and press the {RETURN} key.

Do you want this device to be the Print Screen Device? [Y/N] <N>

If you are configuring a device that cannot be used as a Print Screen Device, such as a mouse, joy stick, digitizer, etc., the computer skips this question.

~~~~~

- [] After responding to this last question, the computer proceeds as follows:

<u>If you selected:</u>	<u>Proceed to:</u>
System CRT	DISPLAY 4
Serial port A	DISPLAY 20
Serial port B	DISPLAY 21
Parallel device	DISPLAY 19

DISPLAY 13:

~~~~~  
Select one of the following I/O ports:

- A. Serial A(J1) (0E8h)
- B. Serial B(J2) (0ECh)

Enter your port selection:

~~~~~

The choice you make here will determine which connector on the back of the Z-100 you will use.

- [] If you want to use port E8 (HEX) (connector J1), press the {A} key.
- [] If you want to use port EC (HEX) (connector J2), press the {B} key.
- [] Proceed to DISPLAY 14.

DISPLAY 14:

~~~~~

Select one of the following baud rates:

- |          |          |
|----------|----------|
| A. 45.5  | I. 1200  |
| B. 50    | J. 1800  |
| C. 75    | K. 2000  |
| D. 110   | L. 2400  |
| E. 134.5 | M. 4800  |
| F. 150   | N. 9600  |
| G. 300   | O. 19200 |
| H. 600   | P. 38400 |

Enter the baud rate selection (A - P):

~~~~~

- [] Press the key which corresponds to the baud rate that you want and proceed to DISPLAY 15.

DISPLAY 15:

~~~~~

Use the following to select a handshake protocol:

- A. No Handshaking
- B. ETX/ACK
- C. DC3/DC1
- D. RTS Positive (pin 4)
- E. RTS Negative (pin 4)
- F. DTR Positive (pin 20)
- G. DTR Negative (pin 20)

Enter one of the handshake values (A - G):

~~~~~

Handshaking is a way for a serial device to signal the computer that it is ready or not ready to receive information. This option allows you to select the handshaking method that you need for your device.

Note: Select {C} for XON/XOFF operation.

- [] Press the key which corresponds to the handshaking method your device uses. Proceed to DISPLAY 16.

DISPLAY 16:

~~~~~

Use one of the following stop bit values

- A. 1 Stop bit
- B. 1.5 Stop bits

C. 2 Stop bits

Enter one of the stop bit values (A - C):

- [ ] Press the key which corresponds to the number of stop bits that your serial device will use. The computer will display:

Do you want to use parity? (Y/N) <N>

- [ ] If you do not want to use parity checking, press either the {RETURN} or {N} key and proceed to DISPLAY 18.
- [ ] If you want to use parity checking, press the {Y} key and proceed to DISPLAY 17.

**DISPLAY 17:**

Use one of the following parity selections:

- A. Odd parity
- B. Even parity

Enter one of the parity values:

- [ ] If you are using odd parity, press the {A} key.

- [ ] If you are using even parity, press the {B} key.

- [ ] Proceed to DISPLAY 18.

**DISPLAY 18:**

Use one of the following word length selections.

**Note:** Word length is exclusive of stop bits and parity.

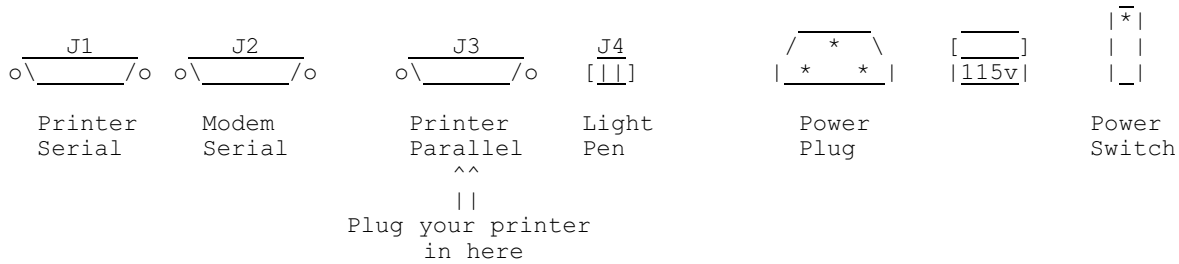
- A. 5 bit words
- B. 6 bit words
- C. 7 bit words
- D. 8 bit words

Enter one of the word length values (A - D):

- [ ] Press the key which corresponds to the number of bits each character will use. Proceed to DISPLAY 9.

**DISPLAY 19:**

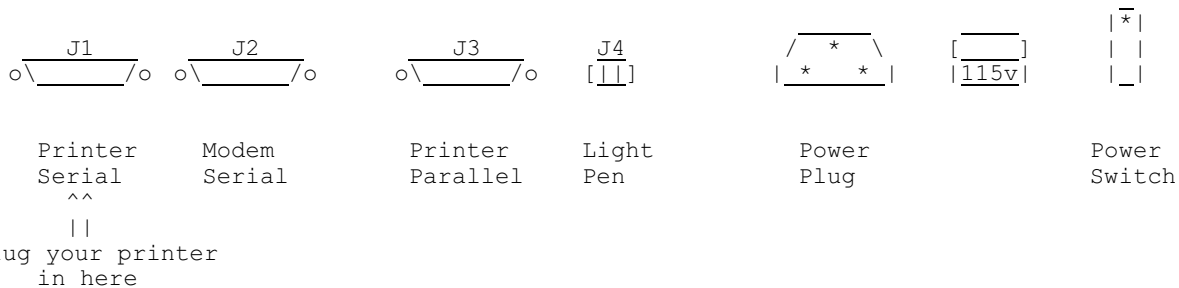
Z-100 Rear Panel



DISPLAY 19 illustrates the back panel of the Z-100. It instructs you to plug your parallel cable into J3. Press any key to continue & proceed to DISPLAY 4.

**DISPLAY 20:**

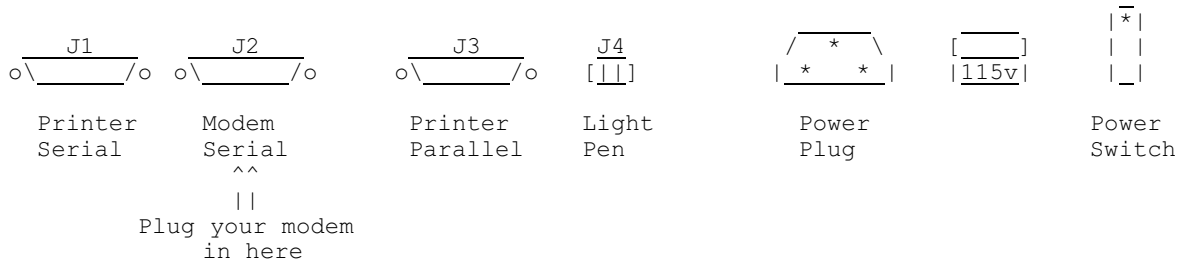
Z-100 Rear Panel



DISPLAY 20 illustrates the back panel of the Z-100. It instructs you to plug your serial cable into J1. Press any key to continue & proceed to DISPLAY 4.

**DISPLAY 21:**

~~~~~  
Z-100 Rear Panel



~~~~~  
DISPLAY 21 illustrates the back panel of the Z-100. It instructs you to plug your serial cable into J2. Press any key to continue & proceed to DISPLAY 4.

**DISPLAY 22:**

~~~~~  
CONFIGUR version 4.06
Copyright(C) 1986 Zenith Data Systems Corporation

NOTE: To change Queue sizes you MUST select '<D>isk' at the Main Menu.

Options	Current Queue Size Memory
A. Keyboard input buffer	(90)
B. Serial A input buffer	(16)
C. Serial B input buffer	(16)
D. Parallel output buffer	(16)
E. Serial A output buffer	(16)
F. Serial B output buffer	(16)

Note: Queue memory values may not reflect current disk values.

- G. Exit review queue sizes. Return to device configuration menu.
- H. Exit to Disk/Memory/Exit select menu. Abort all changes.

Enter selection (A-H):

~~~~~  
DISPLAY 22 is a result of selecting <M>emory changes only.  
You can only review the buffer sizes; you cannot change them.

Selecting 'G' will return you to DISPLAY 4.

Selecting 'H' will return you to DISPLAY 1.

**DISPLAY 23:**

~~~~~  
CONFIGUR version 4.06
Copyright(C) 1986 Zenith Data Systems Corporation
Modifying BIOS file on DRIVE: E:\IO.SYS

Options	Current Queue Size	
	Disk	New Value
A. Keyboard input buffer	(90)	
B. Serial A input buffer	(16)	
C. Serial B input buffer	(16)	
D. Parallel output buffer	(16)	
E. Serial A output buffer	(16)	
F. Serial B output buffer	(16)	
G. Exit review queue sizes. Return to device configuration menu.		
H. Exit to Disk/Memory/Exit select menu. Abort all changes.		

Enter selection (A-H):

~~~~~  
DISPLAY 23 is a result of selecting <D>isk for configuration.  
The size of the buffers **can** be changed.

**DISPLAY 24:**

~~~~~  
CONFIGUR version 4.06
Copyright(C) 1986 Zenith Data Systems Corporation
Modifying BIOS file on DRIVE: E:\IO.SYS

Options	Current Queue Size	
	Disk	New Value
A. Keyboard input buffer	(90)	(200)
B. Serial A input buffer	(16)	(16)
C. Serial B input buffer	(16)	(16)
D. Parallel output buffer	(16)	(16)
E. Serial A output buffer	(16)	(16)
F. Serial B output buffer	(16)	(16)
G. Exit review queue sizes. Return to device configuration menu.		
H. Exit to Disk/Memory/Exit select menu. Abort all changes.		

Enter selection (A-H): B
Queue size desired (16 - 65521): 50

~~~~~  
DISPLAY 24 is the same display with one change completed and the second, to buffer B in progress. Note that after the first change, the 'New Values' column is now shown.

**DISPLAY 25:**

~~~~~  
CONFIGUR v4.06 for H/Z-100 Computers
Displaying BIOS file on DRIVE: E:\IO.SYS

Parameter	PRN Device	AUX Device	CON Device	COM1 Device
Physical Device	Parallel	Serial B	System CRT	Serial A
Strip Parity on Input:	No	No	No	No
Strip Parity on Output:	No	No	No	No
Map Lowercase to				
Uppercase on: Input:	No	No	No	No
Output:	No	No	No	No
Base Port Address (Hex):	0E0h	0ECh	N/A	0E8h
Baud Rate:	N/A	9600	N/A	9600
Handshaking:	N/A	None	N/A	None
ACK Signal Polarity:	Positive	N/A	N/A	N/A
Stop Bits:	N/A	1 Stop Bit	N/A	1 Stop Bit
Parity:	N/A	None	N/A	None
Word Length:	N/A	8 Bit Word	N/A	8 Bit Word
Chars before <ETX>:	N/A	None	N/A	None
# of Pad Characters:	None	None	N/A	None
Pad Character:	None	None	N/A	None
ESCAPE sequence type:	None	None	ZDS/ANSI ESC	None
Device I/O:	Unidirection	Unidirection	Bi-direction	Unidirection

Press RETURN to exit, or press any other key to display the next page...

~~~~~  
**DISPLAY 26:**

~~~~~  
CONFIGUR v4.06 for H/Z-100 Computers
Displaying BIOS file on DRIVE: E:\IO.SYS

Current Conditions for MS-DOS Logical CON Device

Current FONT is	SINGLE
Current Lines Per Screen are	25
Current Foreground Color is	White
Current Background Color is	Black
Hardware Clear Screen is	ENABLED
Display Low Characters is	ENABLED
Hold Screen Mode is	DISABLED
CR on LF is	DISABLED
LF on CR is	DISABLED
Word Wrap is	DISABLED
Keyboard Click is	ENABLED
Block Cursor is	DISABLED
Keyboard Shift Mode is	DISABLED
Alternate Keypad Mode is	DISABLED
Blinking Cursor is	ENABLED
Keyboard Auto Repeat is	ENABLED
Current Print Screen Device is	Parallel

Press RETURN to exit, or press any other key to display the next page...

DISPLAY 27:

~~~~~  
CONFIGUR v4.06 for H/Z-100 Computers  
Displaying BIOS file on DRIVE: E:\IO.SYS

| BUFFER           | Current Size |
|------------------|--------------|
| Keyboard Input:  | 90           |
| Serial A Input:  | 16           |
| Serial A Output: | 16           |
| Parallel Output: | 16           |
| Serial B Input:  | 16           |
| Serial B Output: | 16           |

The MS-DOS Logical Devices are programmed to use the following devices:

|            | PRN Device | AUX Device | CON Device | COM1 Device |
|------------|------------|------------|------------|-------------|
| Printer:   | Yes        | Yes        | No         | Yes         |
| Modem:     | No         | No         | No         | No          |
| Terminal:  | No         | No         | Yes        | No          |
| Mouse:     | No         | No         | No         | No          |
| Joy Stick: | No         | No         | No         | No          |
| Digitizer: | No         | No         | No         | No          |
| Plotter:   | No         | No         | No         | No          |
| Scanner:   | No         | No         | No         | No          |
| Other:     | No         | No         | No         | No          |

Press RETURN to continue...

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I hope you find this article helpful.
If you have any questions or comments,
please email me at:
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Cheers,

Steven W. Vagts

