

Kermit
Reference
Manual

Reliance
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CONTROLS

Instruction Manual J-3616-1

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1.0 INTRODUCTION

Kermit is a software utility used chiefly for transferring files from one computer to another through ordinary asynchronous terminal connections. A software protocol is used to insure that data is correctly transmitted. Using a standard RS-232C cable or modem, Kermit can perform any of the following functions:

1. Emulate a DEC VT-102 terminal.
2. Transfer files from one personal computer to another personal computer.
3. Transfer files from a personal computer to a host computer, e.g., a VAX.
4. Capture serial port input.

The ReSource AutoMax Programming Executive (M/N 57C304 or M/N 57C305) incorporates Kermit software. When you load the AutoMax Executive software onto your personal computer, Kermit will be loaded on as well. See the ReSource AutoMax Programming Executive Software Loading Instructions (J-3727) for more information on loading the AutoMax Executive onto your computer.

1.1 Manual Scope

This manual describes Kermit commands, how the commands are used with your IBM XT- or AT-compatible personal computer, and the hardware connections that are required between computers. In addition, the manual includes specific examples of the following Kermit functions: emulating a VT-102 terminal, transferring files between personal computers, transferring files from a personal computer to a host computer, e.g., a VAX, and capturing serial port input.

Related publications that may be of interest:

- J-2611 DCS 5000 PRODUCT SUMMARY
- J-3630 ReSource AutoMax PROGRAMMING EXECUTIVE INSTRUCTION MANUAL
- J-3727 ReSource AutoMax PROGRAMMING EXECUTIVE SOFTWARE LOADING INSTRUCTIONS

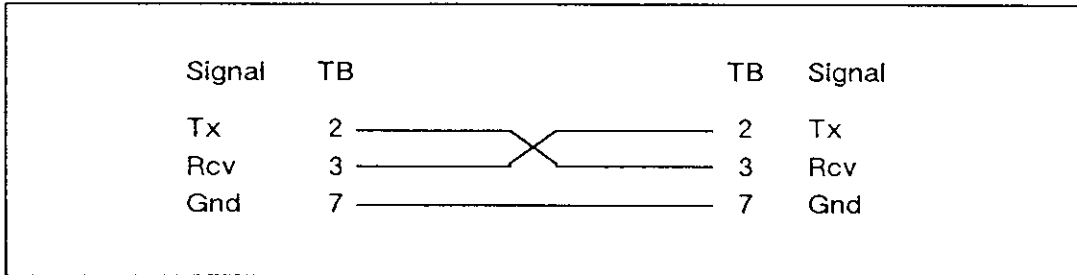
1.2 Conventions

This manual is written using the following conventions:

1. Control characters are preceded by “^”. On the keyboard, you enter the control character by holding down the “Ctrl” key and the designated ASCII character at the same time.
2. Items that appear in brackets ({}) denote options.
3. <CR> denotes a carriage return or the <enter> key.

1.3 Cable Connections

The following diagram illustrates the serial port connections required in order to use Kermit:



2.0 OVERVIEW OF KERMIT COMMUNICATIONS

In order to communicate with another device, a Kermit program must be resident on each end of the serial communication line. You must therefore install Kermit on the host computer or other personal computer with which you want to communicate. To do so, simply copy files KERMIT.EXE and KERMIT.INI from the personal computer on which the AutoMax Executive is loaded to the root directory of the other device.

The default prompt for Kermit is "ASD-KERMIT>". In order to minimize any confusion about whether you are in the local or remote Kermit, you should define a different prompt for the Kermit that you load onto any other computer. You can change the prompt using the SET command and specifying the PROMPT option (see section 3.2).

In order to use Kermit to communicate, the Kermit programs on each end must be running. You can run both programs from one end using specific commands described later in this manual. The procedure is fairly simple. First run Kermit on your local personal computer. From system command level (i.e., the C:\ prompt) type "KERMIT", or select F6 COMMUNICATION INTERFACE from the main AutoMax Programming Executive menu. Then CONNECT to the remote computer and run Kermit on the remote computer.

When you tell Kermit to CONNECT, it will send all characters entered at the keyboard through the serial port to the remote computer. Kermit has a special ability to either interpret commands from the keyboard directly (like other programs) or to pass the commands through the serial port to the remote computer.

Depending upon the operation you want to perform, you may need to put the remote Kermit program into SERVER mode. This is the case with the GET and SEND file commands. You must "escape" back to the local computer running Kermit to carry out the selected operation.

Chapters 3 and 4 of this instruction manual describe Kermit commands and provide examples of how to use the commands to perform some common operations.

3.0 SUMMARY OF KERMIT COMMANDS

The following is a brief summary of Kermit commands:

HELP	- Access a help screen. (also "?")
SET	- Set or modify parameters used in file transfer.
SHOW	- Display parameters set by the SET command.
CONNECT	- Connect to a remote computer.
LOG	- Initiate recording of data on serial port.
CLOSE	- Close recording of data on serial port.
SERVER	- Initiate SERVER on a remote computer for use with GET and SEND commands.
SEND	- Send file(s) to a remote computer in SERVER mode.
GET	- Get files(s) from a remote computer in SERVER mode.
BYE	- Log off remote SERVER and exit Kermit.
FINISH	- Shut down SERVER mode on remote computer.
EXIT	- Exit from Kermit

3.1 HELP Command

The HELP command displays a brief summary of Kermit commands. You may also type "?" within a command to display a short help message for that particular command.

Format of the HELP command:

HELP

or

?

3.2 SET Command

The SET command can be used to establish or modify various parameters for file transfer or terminal connection. You can display the parameters that can be SET using the SHOW command described in section 3.3.

Format of the SET command:

SET parameter {value}

The following parameters may be set:

PORT	- This parameter is used to specify the communications port that will be used for the file transfer or CONNECT. Set this parameter before issuing any port-related commands or setting any other parameters, e.g., SPEED. The options are typically COM1 or COM2.
------	---

SPEED – This parameter is used to set or change the baud rate on the current communications port. The baud rate is the speed at which data is transferred. Common baud rates are 300, 1200, 2400, 4800, and 9600.

FILE TYPE – This parameter is used on a VAX with the option **BINARY** when you wish to send binary files to or from a VAX. When this option is in effect, data received by the VAX is stored as 510 bytes in each record, except for the last record, which will contain only as much data as is left in the file. If this option is not specified, files received by the VAX are stored as variable length records with carriage returns and with line feed sequences implied between records. In this mode, a record must be <=4096 characters and be terminated with a carriage return, line feed. Records longer than 4096 characters will cause an error.

This command must be entered on the VAX before putting the VAX in the **SERVER** mode. You cannot send a mixture of ASCII and binary files to a VAX in one **SERVER** mode session if the files will be accessed on the VAX.

Example: the following commands would change the communication port to **COM2** and set the baud rate at 2400:

```
ASD-KERMIT>SET PORT COM2<CR>  
ASD-KERMIT>SET SPEED 2400<CR>
```

3.3 SHOW Command

The **SHOW** command displays the parameters that can be set by the **SET** command, e.g., **PORT**, **SPEED**, and **FILE TYPE**.

Format of the **SHOW** command:

```
SHOW parameter
```

3.4 CONNECT Command

The **CONNECT** command establishes a connection with a remote device.

Format of the **CONNECT** command:

```
CONNECT
```

or

```
C
```

On personal computers, the connection is made through the port designated by the **SET PORT** command. Once you **CONNECT**, the local personal computer can function as a **VT-102** terminal. At this point, you run **Kermit** on the remote end and designate the remote as the **SERVER**, if necessary.

The local personal computer will function as a VT-102 terminal until you enter an escape character. The escape character is “^]”. The following single character commands can be entered on the same line as the escape character:

- ? - List all single character commands.
- C - Terminate the connection and return control to the local Kermit.
- S - Show connection status.
- B - Send a BREAK signal.
- F - Dump screen to a file.
- P - Push to DOS without breaking the connection. Return to Kermit by typing “EXIT”.
- Q - Suspend the logging session transcript.
- R - Resume the logging session transcript.

3.5 LOG Command

The LOG command is used to create a transcript, i.e., a record of the screen displays occurring during a CONNECT session. The LOG command is also used to capture data coming in through the serial port. An active log session can be suspended by entering “^]Q”. The session can later be resumed by entering “^]R”.

Format of the LOG Command:

LOG filespec

Filespec is the name of the file that will store the captured data.

3.6 CLOSE Command

The CLOSE command is used to stop logging of a remote session and close the file created with the LOG command.

Format of the CLOSE command:

CLOSE

3.7 SERVER Command

The SERVER command tells a remote Kermit to stop accepting commands from the keyboard of the computer it is running on and to receive all further instructions in the form of Kermit packets from the other system running Kermit. After you have entered this command, you will need to get back to your local Kermit. You do this by typing “^]C”, which allows you to “escape” from the remote Kermit and connect back to the Kermit running on your local computer. The following commands can be accepted by the remote SERVER: GET, SEND, BYE, and FINISH.

Format of the SERVER command:

SERVER

3.8 SEND Command

The SEND command sends a file or group of files to the remote system. The SEND command can only be used when a local Kermit has been connected to a remote Kermit SERVER. This means that you must have CONNECTed to the other system, logged in if necessary, run Kermit there, issued the SERVER command, and escaped back to the local Kermit.

Format of the SEND command:

```
SEND filespec1 {filespec2}
```

Filespec1 is the name of the local file you want to send, preceded by the drive and directory specification if necessary. Filespec1 may contain the wildcard character (*). If filespec1 contains wildcard characters, then all matching files will be sent in directory listing order (according to the ASCII collating sequence) by name. If a file cannot be opened for read access, it will not be sent.

If filespec1 does not contain any wildcard characters, then the single file specified by filespec1 will be sent. Optionally, filespec2 may be used to specify the name under which the file will arrive on the other system. Filespec2 is not verified locally in any way. If filespec2 is not specified, the file will be sent with the name of filespec1.

Several single character commands may be entered while a file transfer is in progress.

- ^X - Stop transmission of the current file and go to the next, if any.
- ^Z - Stop transmission and return to Kermit command level.
- ^C - Return to Kermit command level immediately without sending any notification to the remote system.
- ^E - Return to Kermit command level immediately and send an error packet to the remote system.
- CR- Simulate a time-out. Re-send the current packet if transmitting or reject the expected one if receiving.

3.9 GET Command

The GET command requests a remote Kermit SERVER to send the file or group of files specified. The GET command can only be used when a local Kermit has been connected to a remote Kermit SERVER. This means that you must have CONNECTed to the other system, logged in if necessary, run Kermit there, issued the SERVER command, and escaped back to the local Kermit.

Format of the GET command:

```
GET remote-filespec
```

The remote-filespec is any string that is a legal file specification for the remote system; it is not parsed or validated locally. The remote-filespec can contain a wildcard character (*). If the remote-filespec contains a wildcard

character, then all matching files will be sent in directory listing order (according to the ASCII collating system) by name. As files arrive, their names will be displayed on the screen. You cannot specify a different file name for the file.

The same single character commands that can be executed during SEND (see 3.8 above) can be executed during GET.

3.10 BYE Command

The BYE command is used by a local Kermit to shut down and log out of a remote Kermit SERVER. This will also close out any log files and exit from the local Kermit.

Format of the BYE command:

BYE

3.11 FINISH Command

The FINISH command is used by a local Kermit to shut down a remote Kermit SERVER without logging off the remote job so that you can CONNECT back to it. Any active log files will be closed.

Format of the FINISH command:

FINISH

3.12 EXIT Command

The EXIT command is used to exit from Kermit running on either the remote or local system. If you EXIT from a remote Kermit, you will exit to system level on the remote computer, not to your local computer.

Format of the EXIT command:

EXIT

4.0 USING KERMIT

The following sections illustrate how to use Kermit to emulate a VT-102 terminal, transfer files from one personal computer to another, transfer files from a personal computer to/from a host computer, and capture serial port input.

4.1 DEC VT-102 Terminal Emulation

With Kermit, your personal computer can be used to emulate a VT-102 terminal. The serial port that you intend to use for communication should be connected to the computer that you will be communicating with. See section 1.3 for the proper connections.

Run the AutoMax Programming Executive software. From the main menu select F6 COMMUNICATION INTERFACE. The screen will display the Kermit prompt:

```
ASD-KERMIT>
```

The default port is COM1. The default baud rate is 9600. If these parameters are acceptable, they do not need to be specified. Otherwise, use the SET command described in section 3.2 to change the parameters.

Next, you simply connect to the remote computer by typing the following:

```
ASD-KERMIT>CONNECT<CR>
```

or

```
ASD-KERMIT>C<CR>
```

You will then need to log on to your host computer using any established protocol, e.g., password, etc.

From this point on, your PC will function as a VT-102 terminal. You can return to the Kermit running on your local machine by entering the escape character “^]C”. To go back to the remote Kermit, type “C”.

You can exit the remote Kermit and go to the system level of the remote computer by entering:

```
ASD-KERMIT>EXIT<CR>
```

4.2 Transferring Files from One Personal Computer to Another Personal Computer

Kermit allows you to transfer files from one personal computer to another. This feature is particularly useful for two computers that have incompatible disk drives.

The two computers should be connected through their serial ports. See section 1.3. for the proper connections. Run the AutoMax Programming Executive software on both computers. On your local computer, select the path from which or to

which you will be transferring files. First, select F4 SYSTEM\SECTION from the main menu screen and then F4 SELECT PATH from the next menu screen. Enter the drive, SYSTEM (subdirectory) and SECTION (next level subdirectory, if any) for the file.

Next, run Kermit on the remote personal computer. You must put the remote Kermit into run independently, i.e., by typing in the KERMIT command at the keyboard of the remote personal computer, because the Kermit software does not support a master/slave relationship between two personal computers, only between a personal computer and a host computer.

On your local computer, go back to the main menu and select F6 COMMUNICATION INTERFACE. The screen will display the Kermit prompt:

```
ASD-KERMIT>
```

The default port is COM1. The default baud rate is 9600. If these parameters are acceptable, they do not need to be specified. Otherwise, use the SET command described in section 1.3 to change the parameters.

Next, put one of the personal computers in the SERVER mode:

```
ASD-KERMIT>SERVER<CR>
```

You can then initiate file transfer on the other personal computer by entering the following:

```
ASD-KERMIT>GET filespec<CR>  
to receive  
files
```

or
ASD-KERMIT>SEND filespec<CR>
to transmit
files

When you have completed transferring files, enter:

```
ASD-KERMIT>FINISH<CR>
```

If you are finished using Kermit, you exit by entering the following on both computers:

```
ASD-KERMIT>EXIT<CR>
```

4.3 Transferring Files Between a Personal Computer and a Host

Kermit allows you to transfer files between a personal computer and a host computer, e.g., a VAX. The two computers should be connected through serial ports. See section 1.3 for the proper connections.

Run the AutoMax Programming Executive software on your local computer. Select the path from which or to which you will be transferring files. First, select F4 SYSTEM\SECTION from the main menu and then F4 SELECT PATH from the next menu screen. Enter the drive, SYSTEM (subdirectory) and SECTION (next level subdirectory, if any) for the file.

On your local computer, go back to the main menu and select F6 COMMUNICATION INTERFACE. The screen will display the Kermit prompt:

```
ASD-KERMIT>
```

The default port is COM1. The default baud rate is 9600. If these parameters are acceptable, they do not need to be specified. Otherwise, use the SET command described in section 3.2 to change the parameters.

First, connect to the VAX:

```
ASD-KERMIT>CONNECT<CR>
```

Log into the VAX using your normal log-on procedure. Select the VAX directory from which you will be doing file transfers. Run Kermit in the SERVER mode on the VAX:

```
$KERMIT SERVER<CR>
```

Next, transfer control back to the personal computer by typing “^]C”. You can now transfer files by entering:

```
ASD-KERMIT>GET filespec<CR>  
to receive  
files
```

or

```
ASD-KERMIT>SEND filespec<CR>  
to transmit  
files
```

When you are finished transferring files, type:

```
ASD-KERMIT>BYE<CR> (log off from the  
VAX and exit  
Kermit)
```

or

```
ASD-KERMIT>FINISH<CR>  
(shut down  
Kermit SERVER  
without logging  
off)
```

If you are finished using Kermit on the personal computer, you exit by entering:

```
ASD-KERMIT>EXIT<CR>
```

4.4 Capturing Serial Port Input

Kermit allows you to capture ASCII data from a standard ASCII device, e.g., any port free for use by application tasks running on an AutoMax processor(s), and save it on a disk file. The ASCII device should be connected to one of the serial ports on your programming terminal. Run the AutoMax Programming Executive software. Select F4 SYSTEM\SECTION from the main menu and then F4 SELECT PATH from the next menu screen. Enter the drive, SYSTEM (subdirectory) and SECTION (next level subdirectory, if any) in which you want to place the file.

Go back to the main menu and select F6 COMMUNICATION INTERFACE. The screen will display the Kermit prompt:

ASD-KERMIT>

The default port is COM1. The default baud rate is 9600. If these parameters are acceptable, they do not need to be specified. Otherwise, use the SET command described in section 3.2 to change the parameters.

Next, specify the name of the file that will be used to store the ASCII data:

ASD-KERMIT>LOG filespec<CR>

You can begin the operation by entering:

ASD-KERMIT>CONNECT<CR>

or

ASD-KERMIT>C<CR>

From this point on, all data that appears on the serial port will be written to "filespec". You can end the session and return to your local Kermit by entering "^]C". You should then close the file by typing:

ASD-KERMIT>CLOSE<CR>

If you are finished using Kermit, you can exit by entering:

ASD-KERMIT>EXIT<CR>

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