

Command Reference

Dostek MultiPort DNC provides for remote upload and download by continuously monitoring data received from the CNC and responding to special 'command files' sent to the computer by the CNC operator.

Remote 'commands' are formatted as CNC program messages or comments. For example, the CNC operator might load file 'A123-456' from the computer into the CNC by sending the following special command file:

```
07990  
(L A123-456)  
%
```

This document, and the sample CNC configurations included in the Dostek DNC software, use a default command format which encloses commands within parenthesis, "(" and ")", and the following command identifiers:

- L Transmit file from computer to CNC
- S Receive file from CNC to computer
- D Transmit file directory from computer to CNC
- M Transmit recent messages from computer to CNC
- P Print a file on the default printer

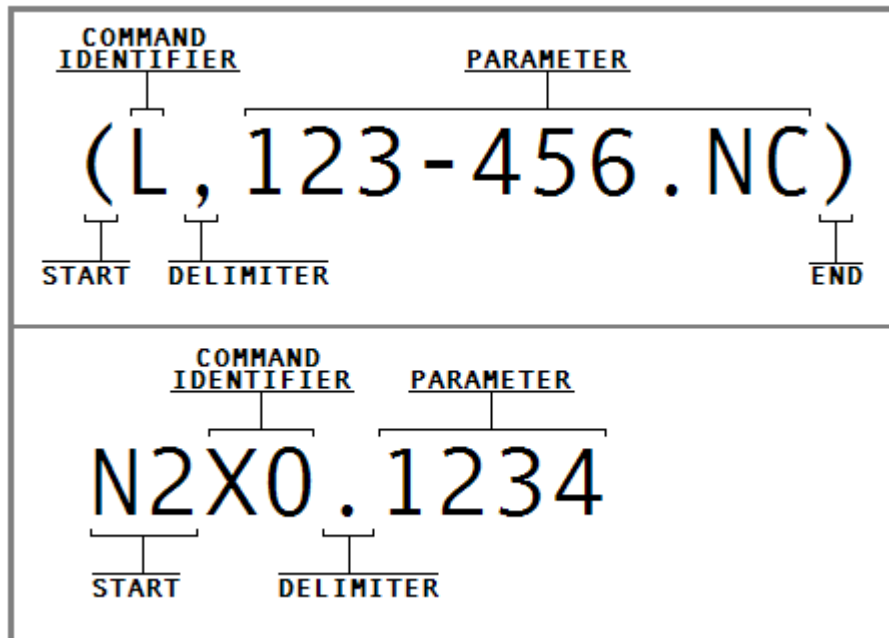
However, the command format is highly configurable to suit the editing and program formatting limitations of any CNC. The command format is configured on the 'Remote/MultiPort' tab in the Dostek DNC Configuration application.

1. Command Overview	2
2. Receive Commands	5
3. Transmit Commands	6
4. Directory Commands	7
5. Message Commands	8
6. Print Command	8

1 Command Overview

A command string received from the CNC is comprised of the following elements:

- v Start
- v Command Identifier
- v Delimiter
- v Parameters
- v Options
- v End



Start	The 'Start' of the command is the character or sequence of characters that the command begins with. When commands are enclosed within parenthesis, 'Start' is '('. Dostek MultiPort DNC removes the Start before interpreting the command. Start is optional (may be blank).
End	The 'End' of the command is the character or sequence of characters that the command ends with. When commands are enclosed within parenthesis, 'End' is ')'. Dostek MultiPort DNC removes the End before interpreting the command. End is optional (may be blank).
Command Identifier	The 'Command Identifier' is the character or sequence of characters that identifies one of the remote commands.
Parameters	The 'Parameters' are the variable values processed by the command. For example, the 'Transmit' command requires a 'Filename' parameter, and may also accept a 'Search' parameter. In command '(L 1234.TAP)', the string of characters '1234.TAP' is the filename parameter, and in command '(L 1234.TAP N1000)', the string '1234.TAP' is the filename parameter and the string 'N1000' is the search parameter. Parameters must be separated from the

	command identifier and from each other with a 'Delimiter' (next paragraph).
Del i mi ter	The 'Delimiter' is the single character that separates the command identifier and command parameters. Dostek DNC automatically determines the delimiter as the first space or punctuation character within the command. For example, in command ' (L 1234. TAP)' , 'space' is determined to be the delimiter, and in command ' (L, END CAP. NC, N1000)' , comma is determined to be the delimiter. Notice that the first parameter for the second example is ' END CAP. NC' because the parameter is comma and not space. Choose a delimiter that is easy to type on the CNC keyboard and does not appear in any of your file names. A delimiter is required for any command that includes one or more parameters. The command ' (M)' does not require a delimiter because there is a command identifier only, and no parameters. There is one exception to this rule: a delimiter is not required if the 'Option Identifier' is set to ' X' (next paragraph).
Opti on Prefi x	Dostek DNC commands may include 'Options'. Options are different than parameters because they affect the 'mode' in which a command operates. The Option Prefix is a single character that immediately precedes a single-character Option Identifier. For example, in command ' (L 1234. TAP -R)' , '-' is the Option Prefix and 'R' is the Option Identifier, which causes the Transmit command (' L' in the example) to automatically repeat the transfer when the end of the file is reached. If the Option Prefix is set to ' X' , all options and parameters are disabled to permit Dostek DNC to work with certain CNCs that provide extremely limited command editing features.
Opti on I denti fi er	The 'Option Identifier' is a single character that specifies a command option. Options for each command are explained starting in Section 2.

Commands may include both parameters and options. For example, the Transmit command supports two optional parameters (filename and search string) and two optional command options (continuous repeat or triggered repeat). Command options may appear in any order before or after command parameters. Command parameters must appear in a specific order with respect to each other. The Transmit command, for example, requires the filename parameter to appear before the search string parameter.

Command parameters and options must be separated by a 'delimiter' character. The first non-alphanumeric character (space or punctuation character) in the command string is considered to be the delimiter character. For example, the delimiter is the space character for (L 1234) and (L 1234 /C), and the comma character for (L, 1234). The command (L1234) is not acceptable because there is no delimiter between the command and the command parameter.

Command options may be specified in either of two ways:

- √ a single-character command option may appear immediately following the command identifier, such as (LC *filename*)
- √ otherwise, a command option must be preceded by a command "Option Switch Character" symbol, such as (L *filename* /C) or (L -C *filename*)

The Command Option Prefix Character for each device is set on the 'Remote/MultiPort' tab in the Dostek DNC Configuration application.

1.1 Examples of Command Syntax

Following are some examples of command syntax:

- (L 01234.TAP) Transmit file "O1234.TAP"
- (L 01234) Transmit file "O1234". When a file extension is not specified, MultiPort DNC automatically appends the file extension specified by Name Format, Extension configured on the Device "Receive Options" tab. If this setting is blank, the file extension specified by Receive File Naming settings on the Global "Communication Options" tab. If both settings are blank, the file extension remains blank.
- (L 01234.) Transmit file "O1234". Because the period is included, MultiPort DNC does not automatically use a default file extension.
- (L,A422 TOP) Transmit file "A422 TOP". Because the delimiter is a comma (first non-alpha and non-numeric character), the file name can include embedded spaces.
- (L 01234 N100) Transmit file "O1234" starting with first line starting with "N100". Because the delimiter is a space, "N100" is interpreted as the second command parameter.
- (L01234.TAP) This command is not valid because there is no delimiter between the command "T" and the parameters.
- (LC,01234) Transmit file "O1234", repeating continuously. (Delimiter is ",").
- (L 01234 -C) Transmit file "O1234", repeating continuously. (Command Option Identifier is set to "-").
- (L1\01234) Transmit file "O1234", repeating when triggered. (Delimiter is "\").
- (L-) or (L -) Transmit the previous file in the transmit queue.
- (L 01234_B) Transmit file O1234_B.
- (L01234_B) This command is not valid because there is no delimiter between the command "L" and the parameters.
- (LO_1234B) This command is not valid. The character "_" is interpreted as the delimiter, but "O" is not a valid option for the Transmit command.

2 Receive Commands

In Remote Request mode, Dostek MultiPort DNC operates in "AutoName Individual" receive mode by default. In other words, data received from the CNC is stored automatically according to the program numbers found in the received data. If a program number is not found, received data is stored in a file named "Untitled-001".

The Receive command lets the CNC operator request MultiPort DNC to store received data in a specific file or to store multiple programs in a single file.

- (S 01234. TAP) Receive Manual command. All received data is stored in the specified file until the "Master Command" program is received from the CNC.
- (SS) Receive AutoName Single command. MultiPort DNC stores received data in a single file named according to the first program number received. This command is used to store a main program and subprograms in a single file. Receive is terminated when the "Master Command" program is received. Any data received before the first program number is stored in an Untitled file.
Alternate forms of this command are:
(S2), (S /S) or (S /2)
- (S) Terminate current Receive Manual or Receive AutoName Single command and reset receive mode to AutoName Individual.

When operating in "AutoName Individual" mode, each file is closed when the receive terminate condition occurs (character, string or timeout as specified in device configuration settings).

The "Master Command" option on the DConfig "Remote Request" tab must be enabled for the Receive Manual and Receive AutoName Single commands to work.

Operating procedures for receive commands are explained further in Section ???, "Receiving Programs".

Received files are stored in the folder specified by the "Receive to" option on the "Receive" tab of the MultiPort DNC "Device Options" form.

If the received file name does not include a file extension, MultiPort DNC automatically appends the default file extension specified on the DConfig device "Receive Options" tab or on the DConfig global "Communication Options" tab.

3 Transmit Commands

Transmit commands permit the CNC operator to request MultiPort DNC to send specific files from the computer to the CNC.

- (L file) Request MultiPort DNC to send the specified file from the computer to the CNC.
- (L file search) Request MultiPort DNC to send the specified file from the computer to the CNC, starting with the first line that starts with the 'search' text. Use this command to start drip feeding at a specific line in the program.
- (LR file) Request MultiPort DNC to send the specified file from the computer to the CNC, repeating the file each time a Transmit Trigger condition occurs. Use this command to repeat while drip feeding, but pause after each time to wait for the operator to press the cycle start button. The optional 'search' parameter may also be specified.
Alternate forms of this command are:
(L1 file), (L file /R) or (L file /1)
- (LC file) Request MultiPort DNC to send the specified file from the computer to the CNC, repeating the file continuously until another command is received. Use this command to continuously repeat while drip feeding. The optional 'search' parameter may also be specified.
Alternate forms of this command are:
(L2 file), (L file /C) or (L file /2)
- (LP) Request MultiPort DNC to send the previous file in the queue. Use this command to reload the last program.
Alternate forms of this command are:
(L3), (L /P) or (L /3)
- (LN) Request MultiPort DNC to send the next file in the queue. Use this command to load the next file in the queue.
Alternate forms of this command are:
(L4), (L /N) or (L /4)

A full file name including drive, path and type (extension) may be specified. If the drive and path are not specified, MultiPort DNC searches for the file in the "Root Folder" specified on the "Transmit" tab on the MultiPort DNC "Device Properties" form. If a file type is not specified, MultiPort DNC automatically appends the default file extension specified on the DConfig device "Receive Options" tab or on the DConfig global "Communication Options" tab.

The following combinations of command parameters and options are permitted:

- (LC file search) Request MultiPort DNC to send the specified file from the computer to the CNC, starting with the first line that starts with the 'search' text and repeating the file continuously (repeating from the beginning of the file).
Alternate forms of this command are:
(L2 file search), (L file search /C)
- (L /P /C) Request MultiPort DNC to send the previous (or next, /N) file in the queue, repeating the file continuously.

4 Directory Commands

Directory commands permit the CNC operator to request MultiPort DNC to send a list of the files or folders matching a file specification.

- (D {file spec}) Request MultiPort DNC to send a sorted list of all matching files, including only the name. The file size and file date/time are not included. The optional filespec parameter may include a specific file or folder name or a partial file name with a wildcard character ("*"). If the filespec parameter is omitted, a list of all files in the Transmit Root folder is provided. For example, (D O2*.TAP) provides a list of all files starting with "O2" and ending with ".TAP". The filespec parameter may contain a drive and folder. For example, (D C:\TAPES\MILL\) provides a list of all files in the "C:\TAPES\MILL" folder, and "MILL\" provides a list of all files in the "MILL" folder located in the Transmit Root folder.
- (DT {file spec}) Request MultiPort DNC to send a sorted list of all matching files, including only the name and file date/time. The file size is not included. The optional 'filespec' parameter may be specified. Alternate forms of this command are:
(D2), (D file spec /T), (D file spec /2),
(D /T file spec), etc.
- (DS {file spec}) Request MultiPort DNC to send a sorted list of all matching files, including only the name and file size. The file date/time is not included. The optional 'filespec' parameter may be specified. Alternate forms of this command are:
(D3), (D file spec /S), (D file spec /3),
(D /S file spec), etc.
- (DA {file spec}) Request MultiPort DNC to send a sorted list of all matching files, including the name, file size and file date/time. The optional 'filespec' parameter may be specified. Alternate forms of this command are:
(D4), (D file spec /N), (D file spec /1),
(D /N file spec), etc.
- (DF {file spec}) Request MultiPort DNC to send a sorted list of all matching folders (not files), including the name only. Alternate forms of this command are:
(D5), (D file spec /F), (D file spec /5),
(D /F file spec), etc.

If the transmit queue option is enabled, the Directory command limits the search to the files currently contained in the queue. Use the (D) or (D*) command to request a list of all files in the queue. The current file in the queue will be marked by an "*" character in the queue directory listing .

5 Message Commands

Message commands permit the CNC operator to request MultiPort DNC to send a list of the most recent messages recorded in the device log file. This command can be used to verify that a receive operation was successful, test that MultiPort DNC is started and responding to commands, review recent activities or review recent error messages.

- (M nn) Request MultiPort DNC to send a list of the most recent nn messages for this device. If the number parameter (nn) is omitted, all saved messages are sent. MultiPort DNC saves only the most recent messages, about 25 in total.

6 Print Command

The Print command permits the CNC operator to request MultiPort DNC to print a specified file on the computer's default printer.

- (P filename) Request MultiPort DNC to print a file to the default printer. If the filename parameter is omitted or the specified file is not found, an error message is returned to the CNC.