

N3300/N600 NETWORK PRINTER PRODUCT INFORMATION

Part No. BBF-104671 Rev. A

This document describes the features available for N3300 and N600 Series printers. This information is supplemental to the printer User Manual and the N-Series Network Installation and User Guide.

NOTE: The Serial configuration cable must be installed with the printer baud rate set to 9600 to access network related features.

The connection on the N-Series network interface cover labeled Serial is connected to the printer serial port and is used for communicating both print jobs and configuration. If the cable connecting the network interface to the printer serial port is disconnected, the following message will appear in the display of the printer when attempting to access network related features using the keypad:

```
"<Config Error>"  
"Check Serial I/F"
```

The printer will function if configured properly; however, no LAN setup features can be accessed.

Menu Updates

NOTE: The M6 PARALLEL CTRL menu in the N3300 (G5 PARALLEL CNTRL in the N600) has been renamed to NETWORK CTRL. The parallel features are still available at the end of this menu.

Under M6 (G5) NETWORK CTRL² the following features are available:

- Enter Password
- Print LAN Config
- Set IP Address¹
- Set Subnet Mask¹
- Set Gateway¹
- Run Loop Back¹

¹ These features are not displayed unless the correct password has been entered.

² Network Control Menu features may also be accessed using the Quick Access key on the N3300 Series.

Under M7 PROFILE CNTRL (N3300 Series ONLY) the following features are available:
(for more information refer to N3300 Features discussed later in this document).

Par Prt Off
Ser Prt Off
Port Time 8s

Lan Related Keypad Messages

After power up a 45 second self test period is required before accessing the features located in the Network Control menu.

Attempting to access these features during this time period will result in the following message.

```
"<LAN Self Test>"  
" Please Wait"
```

The Network control features are not active when print jobs are pending. Attempting to access these features will result in the following message.

```
"<FIFO not Empty>"  
"Finish print Job"
```

To access LAN features the serial configuration cable must be connected between the LAN interface and printer. Attempting to access these features with the serial cable disconnected will result in the following message.

```
"< Config Error >"  
"Check Serial I/F"
```

Entering Passwords

A password must be entered to access the following features. The default password is "system".

Set IP Address
Set Subnet Mask
Set Gateway
Run Loopback

NOTE: If this password is changed by the network administrator the new password must be used to access these features.

To enter a **password**:

1. N3300: Select the **“Enter Password”** by opening the keypad setup door and pressing the Quick Access key once.

A600: Press the Off Line key, then the Setup key. Use the Group key and Feature keys to select the Enter Password feature.
2. Press the Value keys to change the first character which is blinking.
3. Press the **Enter** key. The character is covered with ‘*’ and the blinking cursor ‘_’ advances to the next position to the right. Continue steps 2 and 3 until the complete password is entered.
4. After the last character is entered press the **Enter** key one more time to select the password. If the password is correct the first password protected feature is automatically selected.

Example to enter password of ‘ABC’

	<u>Keypad Display</u>
Select the Enter Password feature.	Enter Password
Press Value keys to begin entering characters. _	
Press Value keys until ‘A’ is displayed.	A
Press Enter.	*_
Press Value keys until ‘B’ is displayed.	*B
Press Enter.	**_
Press Value keys until ‘C’ is displayed.	**C
Press Enter.	***_
Press Enter again to verify password.	

The following message is displayed if the password is not correct.

"Invalid Password"
"Please try again"

After three unsuccessful attempts the following message is displayed. The printer must be powered off then on before attempting to enter another password.

"Password Timeout"
"Turn Printer Off"

NOTE: On the N600 printer, turn the printer power off and remove the plug from the jack labeled 5VDC on the Network Interface enclosure and then reconnect. Powering the printer off does not power off the network interface.

Printing Network configurations

A network configuration print out feature is available to aid installation and trouble shooting. This feature has several options available.

To print network configuration select the “**Print xxxxxxxxxxxx**” feature. The following options are available:

<u>Option</u>	<u>Description</u>
Lan Config	Over all configuration (addresses, configuration, protocols)
TCP/IP	TCP/IP related information (IP address & subnet)
IPX/SPX	Netware related information
AppleTalk	AppleTalk related information
Hardware	Hardware revision
Local	Local port status
Network	Network status
PAK Key	Protocol Authorization Key
Services	Print services (a service is a port and associated protocol)
cnt Ether	Ethernet Counters
cnt TCP	TCP counters

After selecting the desired option using the Value keys press the **Enter** key to begin printing.

Setting the IP address

Select the **Set IP Address** feature. This feature is not displayed unless a correct password was previously entered.

Press the Value keys to begin selection. The active number of the IP address will be blinking. After the correct number is displayed press the **Enter** key to select the next number to the right. All four bytes of the IP address must be entered before the new address is active.

Example setting IP address to 138.254.132.120:

Keypad Display

Select the Set IP Address feature.	Set IP Address
Press Value keys to scroll the active number.	I 0.0.0.0
Press Value keys until '138' is displayed.	I 138.0.0.0
Press Enter.	
Press Value keys until '254' is displayed.	I138.254.0.0
Press Enter.	
Press Value keys until '132' is displayed.	I138.254.132.0
Press Enter.	
Press Value keys until '120' is displayed	I138.254.132.120
Press Enter again to accept new IP address.	

Entering an invalid IP address will result in the following message:

```
"<Invalid IP Adr>"  
" Please Retry "
```

Setting Subnet Mask

The same procedure used to set the IP address is used to set the Subnet Mask.

Set Subnet

Note the first character changes to 'S' when setting the subnet.

S0.0.0.0

Entering an invalid Subnet will result in the following message:

```
"<Invalid Subnet>"  
" Please Retry "
```

Setting the Default Gateway

The same procedure used to set the IP address is used to set the **Default** Gateway

Set Gateway

Note the first character changes to 'G' when setting the gateway feature.

G0.0.0.0

Entering an invalid Gateway address will result in the following message:

```
"Invalid IP Adr"  
" Please Retry "
```

Running the Loop Back Test

Running the loop back test results in the LAN interface transmitting a 23 line ASCII roll pattern to the printer on the parallel interface. A valid password must be entered before accessing this feature.

Run Loopback

NOTE: This test may only be performed when no print jobs are pending or data is present in the FIFO.

CAUTION: This test should be run using 8.5 x 11 inch paper, or set the right margin to ensure that the printhead does not print off of the paper.

THE REMAINING INFORMATION IS ONLY VALID FOR THE N3300 SERIES PRINTERS.

Virtual Forms Selection

The Virtual Forms Selection (*VFS*) capability on the N3300 Series printer allows automatic selection of printer profiles based on the active interface (serial/parallel). Since each printer profile contains all form features (paper path, form length, LPI, CPI etc.), using VFS allows automatic paper path selection (on dual tractor models) and form configuration with **no host** programming.

On single tractor models the form will be parked (after tearing off) and the user requested to load the new one when VFS is used.

On models equipped with the optional “**Quik-Cutter**”, the forms will be automatically cut when changing from one paper path to another.

VFS is configured by setting the following two features and configuring the LAN interface and host computer to use either the serial or parallel ports.

VFS may also be configured so that the print jobs from the Network Host will select a certain profile and print jobs from a local host will select a different profile. To allow this, connect a local host to either the parallel or the serial interface on the printer and configure the Network Host to use the remaining interface port.

Profile Select Feature via Serial/Parallel Port

The **Parallel Port** feature (Par Prt Off) specifies which profile is automatically selected when a new print job is received on the parallel interface.

Ex. To select profile 1 (renamed Checks) when data is received on the parallel port:

Par Prt Checks

The **Serial Port** feature (Ser Prt Off) specifies which profile is automatically selected when a new print job is received on the serial interface.

Ex. To select profile 2 (renamed Invoices) when data is received on the serial port:

Ser Prt Invoices

Display: "Ser Prt *Invoices*"
or
"Par Prt *Checks*"

Description: This feature allows the user to specify the default profile for each of the communication interfaces. At the start of a print job, the printer checks to ensure that the default profile associated with the active communication interface matches the active profile. If not, a tear off occurs, the default profile is selected, the form is parked, and a new form will be loaded from the paper path associated with the newly selected profile.

Range: OFF
Profile 1
Profile 2
"
"
<Max Profiles>

Default: OFF

If this feature is set to OFF, the communications interface profile selection feature will be ignored.

DPCL Sequence:

Parallel Port Sequence: ESC \$ \$ E 1 . I 3 4 ; <n> . X .
Serial Port Sequence: ESC \$ \$ E 1 . I 3 3 ; <n> . X .

Where <n> is 0(off) to max profiles.

Example using VFS features in a Novell environment:

This example shows the N3302 printer with Ethernet address 00-c9-00-00-50-08 installed as a NetWare print server NQA005008, with Profile 1 configured for Checks and Profile 2 configured for Invoices.

Printer Feature Profile 1 renamed "Checks" Profile 2 renamed "Invoice"

Form Length	43	66
Font	Courier 10	DP 10
Rename xxxxxxxx Checks		Invoice
Path	Main	Alt
Par Prt	Checks	Checks
Ser Prt	Invoices	Invoices

<u>PCONSOLE</u>	<u>Queue Named</u>	<u>serviced by</u>	<u>Printer</u>
	CHECK_QUEUE		NQA005008_1
	INVOICE_QUEUE		NQA005008_2

The command "nprint check.dat q=CHECK_QUEUE" will cause the main paper path, Courier font, and a form length of 43 to be automatically selected before the file check.dat is printed.

The command "nprint invoice.dat q=INVOICE_QUEUE" will cause the alternate paper path, DP font, and a form length of 66 to be automatically selected before the file invoice.dat is printed.

Port Timeout Feature

The **Port Time** feature controls how port contention is handled.

Display: "Port Time 8s"

Description: This feature allows the user to specify the amount of time the active communication interface must be idle before allowing communications on the other interface. While one interface is actively communicating and the alternate interface is attempting to print, the alternate interface will be held as busy until either the active print job is finished or times out. This feature is used by both the serial and parallel interfaces. Error conditions and the Offline state are not included in a timeout. Error conditions and time while the printer is off line will not be used to determine a timeout condition.

Range: 1-1200 seconds

Default: 8 seconds

DPCL Sequence:

ESC \$ \$ E 1 . I 3 2 ; <n> . X .

Where <n> is 1 to 1200.

Datasouth Printer Control Language (DPCL)

DPCL allows the user to access printer features using a predefined set of escape sequences and is designed with the following criteria in mind:

- All of the commands following the entry sequence consist of printable ASCII characters.
- The user has the ability to add comments to the data stream. These comments will either be ignored or printed as text in certain modes.
- Allows configuration of any and all user profiles without front panel intervention.
- While in DPCL mode, the print position is maintained with the exception of print position related DPCL commands.

NOTE: Altering the configuration of the active interface in DPCL mode may cause loss of communication with the host computer.

The following is a summary of the DPCL escape sequences. A complete description of this emulation is found in the Printer Programmer's Manual.

Table 1 DPCL Command Sequences

ASCII Command	DPCL Emulation Command Description
ESC\$\$\$E _l .	DPCL entry mode
X.	DPCL exit mode
I1; <i>P_l</i> .	Forms Length
I2; <i>P_l</i> .	Vertical Pitch
I3; <i>P_l</i> .	Top Margin
I4; <i>P_l</i> .	Bottom Margin
I5; <i>P_l</i> .	Left Margin
I6; <i>P_l</i> .	Right Margin
I7; <i>P_l</i> .	Manual Tear Time
I8; <i>P_l</i> .	Automatic Tear Time
I9; <i>P_l</i> .	Front Insert Time (Performax Only)
I10; <i>P_l</i> .	Paper Slew Speed
I11; <i>P_l</i> .	Buffer Size Control (Documax Only)
I11; <i>P_l</i> .	Window Size Control (Performax Only)
I12; <i>P_l</i> .	Ribbon Usage (Performax Only)
I13; <i>P_l</i> .	DGCL or Bar Code Command Character
I16; <i>P_l</i> .	Number of Data Bits (ASCII)
I17; <i>P_l</i> .	Maximum Profile Number
I18; <i>P_l</i> .	Change Profile
I19; <i>P_l</i> .	Automatic Form Gap Distance (Documax)
I20; <i>P_l</i> .	Ribbon Check Limit (Performax)

Table 2 DPCL Command Sequences (cont.)

ASCII Command	DPCL Emulation Command Description
I21; P_1 .	Ribbon Replace Limit (Performax)
I22; P_1 .	Ribbon Life Limit (Performax)
I23; P_1 .	Directional Pass Offset (Performax)
I24; P_1 .	Window Size Control (Documax)
I25; P_1 .	Heavy Forms Carriage Position (Documax)
I26; P_1 .	Heavy Forms Activation (Documax)
I27; P_1 .	Cut Sheet Timeout (Documax)
I28; P_1 .	Cut Sheet Calibration (Documax)
I29; P_1 .	Horizontal Gap Position (Documax)
I30; P_1 .	Vertical Gap Position (Documax)
A1; $P_1 ; P_2 ; P_{32}$.	Set Horizontal Tabs
A2; $P_1 ; P_2 ; P_{32}$.	Clear Horizontal Tabs
A3; $P_1 ; P_2 ; P_{32}$.	Set Vertical Tabs
A4; $P_1 ; P_2 ; P_{32}$.	Clear Vertical Tabs
F1; P_1 .	Automatic Load Distance (Performax)
F2; P_1 .	Tractor Horizontal Adjust Distance
F3; P_1 .	Cut Sheet Horizontal Adjust Distance (Performax)
F5; P_1 .	Tear Off Distance
R1; P_1 .	Clear All Horizontal Tabs
R2; P_1 .	Clear All Vertical Tabs
R3; P_1 .	Save Profile
R4; P_1 .	Reset Profile
R5; P_1 .	Print Profile
R6; P_1 .	Print Wire Test
R7; P_1 .	Print Alignment Test (Performax)
R8; P_1 .	Form Thickness Adjustment (Documax)
R10; P_1 .	Reset Quick List (Documax)

Table 2 DPCL Command Sequences (cont.)

ASCII Command	DPCL Emulation Command Description
R12; P_1 .	Execute Mode Test
R13; $P_1 P_2$.	Execute Self Test
R14; $P_1 P_2$.	Reset All Profiles (Performax)
R14; $P_1 P_2$.	Reset NVRAM (Documax)
R15; P_1 .	Reset Keypad Lockout
B1; P_1 .	Automatic Tear Off (Performax)
B2; P_1 .	Automatic Line Feed
B3; P_1 .	Automatic Carriage Return
B4; P_1 .	Automatic Line Wrap
B5; P_1 .	Unidirectional Print
B6; P_1 .	Print On Cut Sheet Load (Performax)
B7; P_1 .	Power Up On Line
B8; P_1 .	Quiet Mode (Not available on Quiet Option)
B9; P_1 .	DGCL/Barcode Recognition
B10; P_1 .	One Dot Overlap
B23; P_1 .	Serial Enable (Performax ASCII Only)
B24; P_1 .	Eighth Bit Enable (ASCII Only)
B25; P_1 .	Parallel Enable
B26; P_1 .	Print Suppression (Documax)
B27; P_1 .	Paper Out Detection Defeat
B28; P_1 .	Auto Path Switch (Documax Dual Tractor)
B29; P_1 .	Vertical Graphics
B30; P_1 .	Horizontal Graphics
B32; P_1 .	High Impact
E1; P_1 .	Manual Tear
E2; P_1 .	Emulation Mode
E3; P_1 .	Font/Pitch

Table 2 DPCL Command Sequences (cont.)

ASCII Command	DPCL Emulation Command Description
E4; <i>P₁</i> .	Symbol Set
E5; <i>P₁</i> .	Nationality
E6; <i>P₁</i> .	Slashed Zeroes
E7; <i>P₁</i> .	DGCL/Bar Code Exit Mode
E18; <i>P₁</i> .	Baud Rate (ASCII Only)
E19; <i>P₁</i> .	Serial Configuration (ASCII Only)
E20; <i>P₁</i> .	Parity (ASCII Only)
E21; <i>P₁</i> .	Serial Handshake Mode (ASCII Only)
E22; <i>P₁</i> .	Parallel Handshake Mode
E23; <i>P₁</i> .	Parallel Acknowledge Mode
E24; <i>P₁</i> .	Paper Path
E25; <i>P₁</i> .	Key Control
E26; <i>P₁</i> .	Code V or IGP Recognition (Performax)
E27; <i>P₁</i> .	Mechanical Configuration (Documax)
E28; <i>P₁</i> .	Auto Tear Off Mode (Documax)
E29; <i>P₁</i> .	IBM Character Set (Documax)
E30; <i>P₁</i> .	X-on Control (Documax)
E31; <i>P₁</i> .	X-off Control (Documax)
S1; <i>P₁</i> .	Profile Name
C.	Comment

This information supercedes information of like content in the Printer User Manual (BBF-104431).

Under **M2 Personality** the TI-885 Emulation and the Helvetica 12 Font are no longer listed as available features.

Compliances:

Safety: UL 1950 only

EMI: FCC Class A only