

ND SOFTWARE LIBRARY DISKETTE

PAGE 1

Containing : NOTIS-BG for ND-100
(ENGLISH VERSION) 48 BITS FL.

Directory Name : 10724B04-EN-01S

User Name : FLOPPY-USER

Num	File name	Type	T	File access:			Pages	Bytes
				Public	Friend	Own		
0	BG-PART1-EN-B04	BRF	I	RWACD	RWACD	RWACD	56	111123
1	INST-BG148-B04	PROG	I	RWACD	RWACD	RWACD	4	6144
2	BG-EX01-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	415
3	BG-EX02-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	328
4	BG-EX03-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	311
5	BG-EX04-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	425
6	BG-EX05-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	284
7	BG-EX06-EN-B04	PLOT	I	RWACD	RWACD	RWACD	2	593
8	INST-BG148-B04	COM	I	RWACD	RWACD	RWACD	14	25839
9	XCOM	PROG	I	RWACD	RWACD	RWACD	60	182272

=====
10 files using 146 pages. 148 pages reserved out of 148 pages
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Containing : NOTIS-BG FOR ND-100
(48 BITS FLOATING)

Directory Name : 10724803-XX-02S

User Name : FLOPPY-USER

Num	File name	Type	T	File access:			Pages	Bytes
				Public	Friend	Own		
0	BG-DRIV01-B03	BRF	I	RWACD	RWACD	RWACD	8	13458
1	BG-DRIV02-B03	BRF	I	RWACD	RWACD	RWACD	10	16670
2	BG-DRIV03-B03	BRF	I	RWACD	RWACD	RWACD	9	16116
3	BG-DRIV04-B03	BRF	I	RWACD	RWACD	RWACD	10	16653
4	BG-DRIV05-B03	BRF	I	RWACD	RWACD	RWACD	9	14420
5	BG-DRIV15-B03	BRF	I	RWACD	RWACD	RWACD	9	14454
6	BG-PART2-B03	PROG	I	RWACD	RWACD	RWACD	12	21812
7	BG-PRINTERS-B03	SYMB	I	RWACD	RWACD	RWACD	2	749
8	BG-TYPER-B03	SYMB	I	RWACD	RWACD	RWACD	2	1479
9	DDBTABLES-E02	VTM	I	RWACD	RWACD	RWACD	11	15034
10	DDB078	VTM	I	RWACD	RWACD	RWACD	2	625

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11 files using 84 pages. 148 pages reserved out of 148 pages
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PAGE 1

Containing : NOTIS-BG FOR ND-100
(48 BITS FLOATING)

Directory Name : 10724B03-XX-03S

User Name : FLOPPY-USER

Num	File name	Type	T	File access:			Pages	Bytes
				Public	Friend	Own		
0	BG-PART3-B03	BRF	I	RWACD	RWACD	RWACD	56	112180
1	BG-PART4-B03	BRF	I	RWACD	RWACD	RWACD	25	47432
2	BG-PART5-B03	BRF	I	RWACD	RWACD	RWACD	22	41602
3	BG-PART6-B03	BRF	I	RWACD	RWACD	RWACD	19	35569

=====
4 files using 122 pages. 148 pages reserved out of 148 pages
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Product	Name NOTIS-BG for ND-100 (Business Graphics) 48 bits fl.	ND-no. 10724B	Category STPR
Reason	. Error Correction . Different Environment . Change/Addition		
Documen- tation	Title NOTIS-BG User Manual NOTIS-BG Brukerveiledning	ND-no. 63.033.01 63.034.01	
Purpose	Produce simple line graphs, bar charts and pie charts on various types of output units.		
Prerequi- sites	Computer Type Floating format Op. system Version ND-100 48 bits SIN III VS > = I		
	ND-no. Product name (At least one of these is necessary)		
	ND 321 NOTIS-terminal with graphic option ND 447 Philips printer ND 448 Philips printer ND 424 Epson printer ND 218 HP-plotter Tektronix 4105 (Not ND product)		
	Minimum mass storage resources for installation User Userspace Number of files SYSTEM 300 pages on 13 files user specified 160 pages on 15 files		
	Minimum mass storage resources permanent User Userspace Number of files SYSTEM 180 pages on 4 files user specified 20 pages on 6 files		
Product consists of		ND-no. for Source 10759B	
Directory Name: 10724B00-EN-1 User Name: FLOPPY-USER			
Prog.no.	File Name	Type T Pg. Bytes	Containing
205956B	BG-PART1-EN-B00	BRF I 56 111822	BG-modules
205957B	INST-BG148-B00	COM I 4 6144	Installation job.
205284B	BG-EX01-EN-B00	PLOT I 2 415	Demo-file
205285B	BG-EX02-EN-B00	PLOT I 2 328	Demo-file
205286B	BG-EX03-EN-B00	PLOT I 2 311	Demo-file
205283B	BG-EX04-EN-B00	PLOT I 2 425	Demo-file
205287B	BG-EX05-EN-B00	PLOT I 2 284	Demo-file
205958B	BG-EX06-EN-B00	PLOT I 2 1000	Demo-file
205959B	INST-BG148-B00	PROG I 14 25393	Installation program
205960B	XCOM	PROG I 60 182272	Installation system

Product	Name NOTIS-BG for ND-100 (Business Graphics) 48 bits fl.	ND-no. 10724B	Category STPR
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Directory Name: 10724B00-NO-1 User Name: FLOPPY-USER

Prog.no.	File Name	Type	T	Pg.	Bytes	Containing
205961B	BG-PART1-NO-B00	BRF	I	56	111834	BG-modules
205957B	INST-BG148-B00	COM	I	4	6144	Installation job.
205279B	BG-EX01-NO-B00	PLOT	I	2	353	Demo-file
205280B	BG-EX02-NO-B00	PLOT	I	2	419	Demo-file
205281B	BG-EX03-NO-B00	PLOT	I	2	320	Demo-file
205278B	BG-EX04-NO-B00	PLOT	I	2	443	Demo-file
205282B	BG-EX05-NO-B00	PLOT	I	2	314	Demo-file
205962B	BG-EX06-NO-B00	PLOT	I	3	701	Demo-file
205959B	INST-BG148-B00	PROG	I	14	25393	Installation program
205960B	XCOM	PROG	I	60	182272	Installation system

Directory Name: 10724B00-2 User Name: FLOPPY-USER

Prog.no.	File Name	Type	T	Pg.	Bytes	Containing
205963B	BG-DRIV01-B00	BRF	I	8	13458	Device-driver
205964B	BG-DRIV02-B00	BRF	I	10	17072	Device-driver
205965B	BG-DRIV03-B00	BRF	I	9	16116	Device-driver
205966B	BG-DRIV04-B00	BRF	I	10	16583	Device-driver
205967B	BG-DRIV05-B00	BRF	I	8	14263	Device-driver
205968B	BG-DRIV15-B00	BRF	I	9	14451	Device-driver
205969B	BG-PART2-B00	PROG	I	12	21812	NRL
205245B	BG-PRINTERS-B00	SYMB	I	2	846	Output device def.
205970B	BG-TYPER-B00	SYMB	I	2	1479	Printer data
203786D	DDBTABLES-D-D	VTM	I	19	20394	VTM-table

Directory Name: 10724B00-3 User Name: FLOPPY-USER

Prog.no.	File Name	Type	T	Pg.	Bytes	Containing
205972B	BG-PART3-B00	BRF	I	56	112180	Fortran library
205973B	BG-PART4-B00	BRF	I	25	47432	Graphic modules
205974B	BG-PART5-B00	BRF	I	24	45339	Graphic modules
205975B	BG-PART6-B00	BRF	I	22	41924	Graphic modules
205976B	BG-PART7-B00	BRF	I	18	32787	VTM-modules

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1 ERRORS CORRECTED

The following errors are corrected from the A-version of NOTIS-BG

- R access on Philips spooling files is not required.
- Error message when opening printer will not be suppressed.
- Graphic Rendition Mode (in TDV menu) is set to 'Attribute' at exit from NOTIS-BG.
- Extended Control Mode (in TDV menu) is set to 'Off' at exit from NOTIS-BG.
- The instruction 'DATAFILE=?' in diagram file for line graph works according to the specifications.

2 KNOWN, BUT NOT CORRECTED ERRORS

- The instructions 'X RANGE=' and 'Y RANGE=' doesn't work as expected. These two instructions require two parameters each lowest and highest value along the actual axis. These two values are used in the algorithm that calculates tic mark with 'nice' labels. The maximum and minimum value along the axis may be adjusted to get 'nice' values on the tic marks.
- If the execution of NOTIS-BG is broken when preparing diagrams for Philips or Epson, the following files may exist on the account afterwards :
 - VECTOR-A:DATA
 - SPLIT-A:RAST
 - SORT-A:RAST

If more than one user is using NOTIS-BG at this time, the letter 'A' in the file names could be any letter. These files are used temporarily in the conversion algorithm, and are deleted when conversion is complete.

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3 CHANGED PREREQUISITES

- The B version of NOTIS-BG may be executed on a Tektronix 4105 color graphics terminal, or a compatible one (TEK 4106, 4107, 4109, 4115)

4 NEW COMMANDS

The following command are added in the B-version. (Not documented in the User Manual.)

- ROTATION=90 . This command (instruction) may be used to rotate the diagram 90 degrees. The diagram will then be plotted on a A4 portrait format instead on an A4 landscape format. In this version of NOTIS-BG it is not possible to rotate any other angles. The instruction has to be used in the first part of the diagram file.

5 NEW FEATURES

- When printing diagrams on the PHILIPS printer, the diagram has to be converted to a raster-format first. The raster-format is printed directly to a spooling file. It is possible to store this raster-picture prepared for PHILIPS on a user specified file. This is done by specifying a file name instead of a logical output device when BG asks for 'OUTPUT DEVICE :'. If the file doesn't exist, the file name has to be written in quotation marks ("file:data"). The file is stored in an internal format for future use and is not suited for direct copying to the Philips printer later.
- It is possible to specify a remote Philips for output in BG-PRINTERS:SYMB
- Tektronix-4105, color graphics terminal may be used to execute NOTIS-BG.

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6 IMPROVED PERFORMANCE

- The algorithm for converting the diagram for the Philip printer is optimized, and output to Philips is not so time consuming as in the A-version.

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7 ADDITION TO MANUAL

7.1 DIAGRAM VARIATIONS

The following diagrams are not documented in the manual:

Text diagrams

```

PLOT-TYPE=LINE
SIZE-OF-PLOT=210,170
XAXIS=INTEGER
XRANGE=0,1
XINTERVALS=0
YAXIS=INTEGER
YRANGE=0,1
YINTERVALS=0
1,1
CHARACTER-SIZE=10
TEXT-LINE=0.90,0.93,270, TEXT DIAGRAM
CHARACTER-SIZE=6
TEXT-LINE=0.75,0.95,270, This text-diagram is
TEXT-LINE=0.68,0.95,270, produced by using the
TEXT-LINE=0.61,0.95,270, 'TEXT-LINE' command
TEXT-LINE=0.54,0.95,270, in a line graph. The
TEXT-LINE=0.47,0.95,270, graph has only one
TEXT-LINE=0.40,0.95,270, data point (1,1). The
TEXT-LINE=0.33,0.95,270, axis labels have to
TEXT-LINE=0.26,0.95,270, be erased afterwards.

```

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Bar chart with both negative and positive values

```

PLOT-TYPE=BAR
SIZE-OF-PLOT=70,140
5
8
-7
11
-3
-1
2
6

```

Line chart with non-increasing x-values

```

PLOT-TYPE=LINE
SIZE-OF-PLOT=70,140
1,2
7,2
7,8
13,2
19,2
19,18
13,18
13,12
7,18
1,18
1,2
PLOT-TYPE=LINE
21,2
35,2
39,6
39,14
35,18
21,18
21,2
PLOT-TYPE=LINE
27,8
32,8
33,9
33,11
32,12
27,12
27,8

```

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7.2 ERROR MESSAGES FROM THE GRAPHIC KERNEL

If a text-string in the diagram file exceeds the maximum length specified in the manual, the following error occurs :

```

** GPGS ERROR          17
* SEVERITY              2
* CALL NO.              ..
* ROUTINE NO.          140
* ARGUMENT NO.         0
* VALUE                 ..
** GPGS VERSION        8200

```

This is only a warning from the graphic kernel, and the drawing continues.

If the file BG-PRINTERS is edited wrong (not according to this document), the following error may occur :

```

** GPGS ERROR          13
* SEVERITY              3
* CALL NO.              ..
* ROUTINE NO.           1
* ARGUMENT NO.         1
* VALUE                 ..
** GPGS VERSION        8200

```

The program stops, because the number specifying output device in BG-PRINTERS is unknown.

7.3 NOTIS-BG IN BATCH

If many diagrams are going to be plotted, it could be convenient to run NOTIS-BG in batch. The following batch-job will do it :

```

@ENTER .....
@NOTIS-BG-ENG-800,<diagram-file name>,<output device>,CC
@NOTIS-BG-ENG-800,<diagram-file name>,<output device>,CC
@NOTIS-BG-ENG-800, ....
@NOTIS-BG-ENG-800, ....
.
.
ESC,ESC

```

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7.4 PLOTTING ON A3 WITH THE HP-PLOTTER

The plotter may be used both for A4 and A3 sheet sizes. Changing the sheet size on the plotter may be done in two ways :

- By switching one of the switches on the back of the plotter (marked A4 - A3).
- By pressing the 'SIZE' button and the 'ENTER' button simultaneously on the plotter's front panel.

When plotting on a A3 sheet, the 'SIZE-OF-PLOT=' instruction must be used to enlarge the diagram to fit the sheet.

7.5 RESTRICTIONS

The following restrictions are not mentioned in the User Manual

- Maximum number of points in a line graph is 1000.
- Maximum number of bars in a bar chart is 25 groups with 2 bars each.

8 INSTALLATION PROCEDURE

- Prepare the NOTIS terminal (see Instruction 1)
- Prepare the HP-plotter (see Instruction 2)
- Prepare the Philips and Epson printers (see Instruction 3)
- Prepare the Tektronix color terminal (see Instruction 4)
- Start installation job (see Instruction 5)
- Edit BG-PRINTERS (see Instruction 6)
- Test NOTIS-BG with the demo files (see Instruction 7)

Instruction 1 : Preparing the NOTIS terminal.

Set these values in the Communications Switches Menu for NOTIS terminals (ND-246 or ND-320 with graphic option) that will be used to view diagrams with NOTIS-BG: CCCCC00:

- Communication handshake: XON/XOFF

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- Transmission Code Length: 7 bits
- Transmission Code Parity: Even
- Transmission Code Stop Bits: 2

Set the same values for the terminal line like this:

Find the terminal's Logical Device Number with the SINTRAN command @WHO-IS-ON. Continue as shown here, typing the underlined commands and parameters. XXXX represents number provided by system.

```

@SINTRAN-SERVICE
*CHANGE-DATA <Logical Device Number>,I,Y,Y,Y
DFLAG/ XXXXXX 1000
CNTREG/ XXXXXX 44005
↑
*EXIT

```

IMPORTANT! The Logical Device Number must be followed by "D". Ex: 53D.

Instruction 2 : Preparing the HP-plotter. (ND-102180)

Equipment:

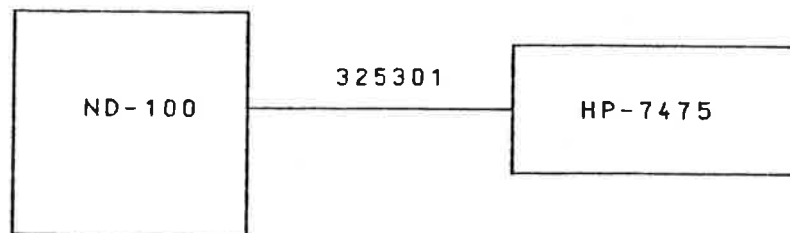
- HP-7475 A3/A4 plotter
- 325301 Cable between ND-100 and HP-7475.
- OR 2 local KM-1D modems connected to each other, with .325345 Cable between ND-100 and one modem, and 325300 Cable between the other modem and the HP-7475.

Connection:

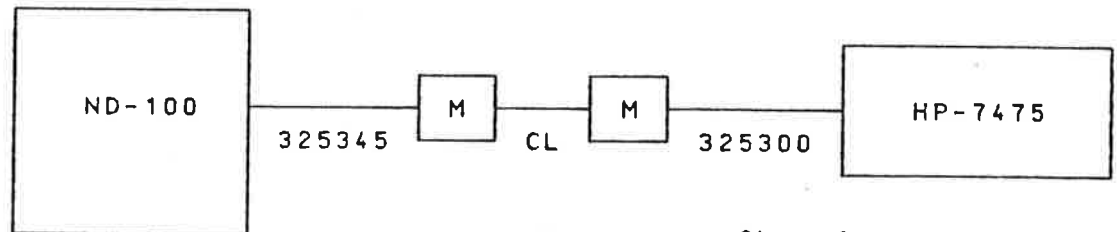
- Set the switches at the back of the plotter for 9600 BAUD, A4 paper, direct line and even parity (7 bit character length): 010001010. For further details, see pages 2-21 and 2-23 in the Operation and Interconnection Manual accompanying the HP-plotter.
- Obtain a terminal line with an RS-232 interface to the ND-100.
- Connect cables in one of the following configurations:

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Alternative 1 : Direct cable between ND-100 and HP-7475.



Alternative 2 : Connection via 2 local KM-1D modems.



CL = Current Loop
M = Local KM-1D Modem

- Log in as user SYSTEM and set a file name for the line:

```
@SET-PERIPH-FILE <file name>,<Logical Device Number>
```

Our plotter has the file name HP-PLOTTER and Logical Device Number 54D. The command is thus:

```
@SET-PER-FILE "HP-PLOTTER",54D
```

- Define the file access so that a user who will be working with the plotter has file access RWC(D):

```
@SET-FILE-ACCESS HP-PLOTTER,RWC,RWC,RWCD
```

- Find the background program for the terminal line with the SINTRAN command @LIST-DEVICE, and abort the background program:

```
@LIST-DEVICE <Logical Device Number>,0
```

```
NNNN
```

```
@ABORT NNNN
```

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- Note the address of the line's background program (represented here by XXXXX) for future use; then set the address to 0:

@SINTRAN-SERVICE

*REMOVE-FROM-BACKGR-TABLE <Logical Device No.>, I, Y, Y, Y

*CHANGE-DATAFIELD (LDN), I, Y, Y, Y

DBPROG/ XXXXXX 0

+
*EXIT

- The transmission speed on the logical device has to be set according to the setting on the plotter. This speed has to be set explicitly, and is done by the following procedure :

@SINTRAN-SERVICE

*CHANGE-DATAFIELD (LDN), I, Y, Y, Y

TSPEED/ XXXXXX 210

(for 9600 baud)

+
*EXIT

For terminal-lines, TSPEED is often set to -1 (177777), which means that the transmission is done according to the terminal setting (soft-switches). This will not work on the plotter! The transmission speed has to be set on the terminal-card for a whole four-group before starting the machine. (Redefinition in software may be done afterwards).

- If you wish, output a test program to the plotter. See the Operation and Interconnection Manual that accompanies the HP-plotter.
- IMPORTANT! Before the plotter begins to draw, a green light blinks on the control panel. Press the plotter's ENTER button.

Instruction 3 : Preparing the Philips and Epson printers.

Philips ND-447 and ND-448 is set up as usual. There are no special requirements. NOTIS-BG takes care of switching between graphic and alphanumeric modes.

NOTE!!

The first versions delivered of the ND-447 had an hardware-error, which results in some black points scattered on the output. This may be corrected by the hardware service people.

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Epson ND-424 is connected to a NOTIS terminal as a local printer, but the printer is not used as a local one. (Use Cable 325356). Output to the printer is sent via the terminal, which hangs during printing.

Setting of DIP-switches :

DIP NO	Switch	ON	OFF
1	1	●	
	2		●
	3		●
	4		●
	5		●
	6	●	
	7	●	
	8		●
2	1	●	
	2		●
	3	●	
	4	●	

Read the instructions accompanying the Epson with regard to switch settings.

On some ND-246 terminals, we have discovered an error in the printer interface, which leads to buffer overflow on the printer and wrong printout.

NOTE!!

When printing on Philips or Epson, conversion from vector information to raster information is necessary. This conversion is very time-consuming especially when printing diagrams with hatched or filled areas.

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Instruction 4 : Prepare the Tektronix color terminal.

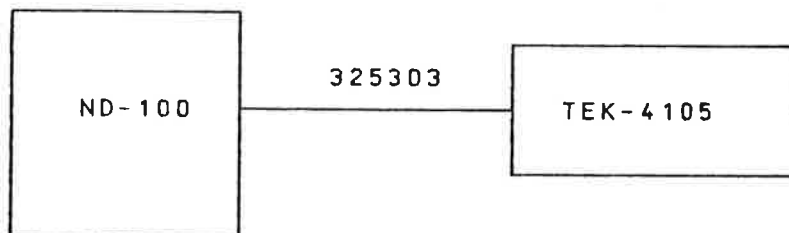
Equipment:

- Tektronix 4105 color graphics terminal
- 325303 Cable between ND-100 and TEK-4105
- OR 2 local KM-1D modems connected to each other, with 325345 Cable between ND-100 and one modem, and 325305 Cable between the other modem and the TEK-4105

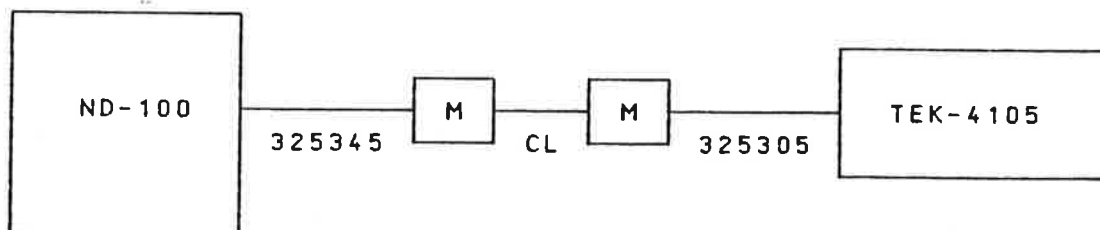
Connection:

The Tektronix terminal needs RS232/C interface on the machine. The connection is done in one of two ways :

Alternative 1 : Direct cable between ND-100 and TEK-4105.



Alternative 2 : Connection via 2 local KM-1D modems.



CL = Current Loop
M = Local KM-1D Modem

These possible connections are the same as for the HP-7475 plotter (see instruction 2), but the cables are different.

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Read the instructions following the terminal about how to set software switches.

The following switch-setting for communication is recommended :

ECHO	NO
IGNOREDEL	NO
BAUDRATE	9600,9600
XMTLIMIT	1200
STOPBITS	2
XMTDELAY	0
PARITY	EVEN
PROMPTSTRING	'>'
PROMPTMODE	NO
QUEUESIZE	800
FLAGGING	IN/OUT
EOMCHARS	CR/LF
EOLSTRING	'CR'
EOFSTRING	''
BREAKTIME	200
BYPASSCANCEL	CR

Set the same values for the terminal line like this:

Find the terminal's Logical Device Number with the SINTRAN command @WHO-IS-ON. Continue as shown here, typing the underlined commands and parameters. XXXX represents number provided by system.

```

@SINTRAN-SERVICE
*CHANGE-DATA <Logical Device Number> .I.Y.Y.Y
DFLAG/ XXXXXX 1000
CNTREG/ XXXXXX 44005
+
*EXIT

```

IMPORTANT! The Logical Device Number must be followed by "D". Ex: 53D.

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Instruction 5 : Start installation job.

The installation is done by starting the installation job which resides on diskette 10724B00-EN-1 (or 10724B00-NO-1) :

Q(10724B00-EN-1:FLOPPY-USER)INST-BG148-B00

The installation program will ask for all necessary information. When installing NOTIS-BG, the user may have an account to temporarily store brf-files which will be deleted afterwards. (Necessary storage requirements is specified in the beginning of this document).

Please study all notes and messages from the installation program carefully.

The files BG-LOAD:LOGG and BG-DUMP:LOGG will be created on user SYSTEM, and contains information about the installation. They should not be deleted. The files X-COM-nn:SAVE and X-COM-nn:MODE (where nn is terminal number on the terminal used for installation) should be deleted after installation. (They can not be deleted automatically in the installation job).

Instruction 6 : Editing BG-PRINTERS.

The device's logical name, SINTRAN file name, GPGS driver number and (optional) plotter speed must be defined for each output device (Screen, plotter or printer) in BG-PRINTERS.

Whichever output device is defined first will be the default output device for NOTIS-BG.

Device logical name is used with NOTIS-BG to identify the specific printer or plotter desired. Each individual output device must have a unique name. Ex: The HP-plotter in Ann's office could be HPANN.

GPGS-driver numbers are :

NOTIS terminal	20
Tektronix-4105	62
Epson printer	206
Philips printer	306
HP-plotter	XX04

The two first digits in the driver number for the HP-plotter are the Logical Device Number. If the plotter has line 54D, the driver number is 5404. (Only Logical Device Numbers with two digits are accepted!)

For the HP-plotter you have the option of specifying plotter speed. Speed is controlled by placing a number from 1 to 100 after the driver number. 100 is the default value. To plot on transparencies, the speed should be reduced by using a low number, for example 5.

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Edit with CAPITAL LETTERS and use a comma to separate parameters.
Comments must begin with CC or follow the final parameter. See also the
accompanying example on BG-PRINTERS.

Instruction 7 : Test NOTIS-BG with the demo files.

Start NOTIS-BG:

```
@NOTIS-BG-ENG  
DIAGRAM FILE NAME : BG-EX01  
OUTPUT DEVICE NAME (cr for SCREEN) : ←↓
```

Continue to test with other demo files (NNN:PLOT).

You ought to be able to produce diagrams on the screen, plotter or
printer. If you choose the plotter as the output device, remember to
press the ENTER button on the plotter to allow it to begin drawing.

To exit from NOTIS-BG, press the EXIT key or type EXIT.