

Product	Name VTM terminal tables (Standard)	Reg. no. 210455G	Category STPR
Reason	New product X Change/Addition Other:	Error Correction Different Environment	
Purpose	Terminal description tables needed to run most full screen programs against standard ND terminals		
Prerequisites	Computer ND-100/5000	Type All	Floating format All
	Op. system Ver. SINTRAN III >= H		
	Minimum mass storage resources for installation		
	User SYSTEM	Userspace 100 pages on	Number of files 4 files
	Minimum permanent mass storage resources		
	User SYSTEM	Userspace 100 pages on	Number of files 4 files
Source	ND number for source: 210495G		
File Name	Type	Containing	
DDBTABLES-C<Rev>	VTM	These are the four standard terminal	
DDBTABLES-D<Rev>	VTM	tables to be installed on user SYSTEM	
DDBTABLES-E<Rev>	VTM	by the INSTALL-TABLES program	
DDBTABLES-G<Rev>	VTM		
INSTALL-TABLES	PROG	This is the standard terminal tables installation program	
VTM-ASSEMBLE-A<Rev>	PROG	Program for creating own terminal tables from DDBxxx-yz:VTM files	
VTM-TYPE-NAMES	VTMA	List of terminal type names needed when running VTM-ASSEMBLE, text file	
VTM-TABLES-G<Rev>	VTMA	Text file containing directives used for creating the standard terminal tables with VTM-ASSEMBLE	
VTM-1B-ARRAY-E<Rev>	BRF	DDBTABLES-E<Rev> provided as a linker file, needed by some 1Bank ND100 programs, at compilation time	
VTM-2B-ARRAY-E<Rev>	BRF	DDBTABLES-E<Rev> provided as a linker file, needed by some 2Bank ND100 programs at compilation time	

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File Name	Type	Containing
VTM-ARRAYS-E<Rev>	NRF	DDBTABLES-E<Rev> provided as linker file, needed by some ND500 programs at compilation time
VTM-1B-ARRAY-G<Rev>	BRF	DDBTABLES-G<Rev> provided as a linker file, needed by some 1Bank ND100 programs, at compilation time
VTM-2B-ARRAY-G<Rev>	BRF	DDBTABLES-G<Rev> provided as a linker file, needed by some 2Bank ND100 programs at compilation time
VTM-ARRAYS-G<Rev>	NRF	DDBTABLES-G<Rev> provided as linker file, needed by some ND500 programs at compilation time
DDB002-0	VTM	Each of these DDBxxx files contain information about a corresponding terminal type, denoted by the three digits following DDB in the filenames. A numbered list of standard terminal typenames is found under "Installation". The DDBxxx files are put together in tables by VTM-ASSEMBLE. DDBxxx-0 files might be used in DDBTABLES- C, D, E and G. DDBxxx-N files fit into DDBTABLES- E and G, while DDBxxx- 7S, 7B, 8S and 8B files are usable with DDBTABLES- G only
DDB003-0	VTM	
DDB004-0	VTM	
DDB005-0	VTM	
DDB006-0	VTM	
DDB007-0	VTM	
DDB011-0	VTM	
DDB036-0	VTM	
DDB052-0	VTM	
DDB053-0	VTM	
DDB053-7S	VTM	
DDB057-0	VTM	
DDB057-7S	VTM	
DDB079-0	VTM	
DDB080-0	VTM	
DDB080-7S	VTM	
DDB083-0	VTM	
DDB083-7S	VTM	
DDB090-0	VTM	
DDB090-N	VTM	
DDB090-7S	VTM	
DDB090-7B	VTM	
DDB091-0	VTM	
DDB091-7S	VTM	
DDB092-0	VTM	
DDB092-7S	VTM	
DDB093-0	VTM	
DDB093-N	VTM	
DDB093-7S	VTM	
DDB093-7B	VTM	
DDB099-0	VTM	
DDB099-7S	VTM	

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File Name	Type	Containing
DDB100-0	VTM	
DDB100-N	VTM	
DDB100-7S	VTM	
DDB100-7B	VTM	
DDB100-8S	VTM	
DDB100-8B	VTM	
DDB103-0	VTM	
DDB103-N	VTM	
DDB103-7S	VTM	
DDB103-7B	VTM	
DDB103-8S	VTM	
DDB103-8B	VTM	
DDB105-0	VTM	
DDB105-7S	VTM	
DDB106-0	VTM	
DDB106-N	VTM	
DDB106-7S	VTM	
DDB106-7B	VTM	
DDB110-0	VTM	
DDB110-N	VTM	
DDB110-7S	VTM	
DDB110-7B	VTM	
DDB113-0	VTM	
DDB113-N	VTM	
DDB113-7S	VTM	
DDB113-7B	VTM	
DDB121-0	VTM	
DDB121-7S	VTM	

**NOTE:**

<Rev> is to be replaced by the current revision of the DIRECTORY or FILE. The revision level is found on the preceding "ND SOFTWARE LIBRARY DISKETTE" pages.

**OVERVIEW:**

Most Norsk Data full-screen programs (like NOTIS-WP) utilize what is known as Virtual Terminal Manager routines (VTM). VTM provides the programs with a standard terminal interface, and uses translation tables to communicate with the different terminal types. To ease error correction, and enable new terminal types to be used with existing programs, the translation-tables, DDBTABLES- C, D, E and G, are kept as separate files on user SYSTEM. This floppy diskette contains the standard DDBTABLES- C<Rev>, D<Rev>, E<Rev> and G<Rev>.

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INSTALLATION:

If all the terminals connected to your Norsk Data computer are among the standard terminal types (see list below), the installation is a straightforward task. The table below also shows which DDBxxx files are included in the different DDBTABLES.

Type	Standard terminal typename	C	D	E	G	DDBTABLES
2	Teletype ASR 33	0	0	0	0	
3	Tandberg TDV 2115	0	0	0	0	
53	Tandberg TDV 2200/9 ND-NOTIS	0	0	0	7S	
80	Tandberg TDV 2200/9 ND-NET	0	0	0	7S	
83	Tandberg TDV 2200/9 V2 ND-NOTIS	0	0	0	7S	
90	Tandberg TDV 2200/9S ND-NET	0	0	N	7S,7B	
93	Tandberg TDV 2200/9S ND-NOTIS	0	0	N	7S,7B	
100	Tandberg TDV 2200/9S 25 ND-NET	0	0	N	7S,7B,8S,8B	
103	Tandberg TDV 2200/9S 25 ND-NOTIS	0	0	N	7S,7B,8S,8B	
106	Nokia ND-Display Terminal 301	0	0	N	7S,7B	
110	Tandberg TDV 1200/1 ND-NET	0	0	N	7S,7B	
113	Tandberg TDV 1200/1 ND-NOTIS	0	0	N	7S,7B	
121	Wordplex 80/90	0	0	0	7S	

To install the standard VTM tables you must be logged on as user SYSTEM. Ensure that the existing DDBTABLES files are called "DDBTABLES-vxx:VTM", by typing:

```
@LIST-FILES DDBTABLES:VTM,,v
```

"v" should be the letter C, D, E or G, while "xx" is supposed to be a revision number. If the files are named differently, rename them to "DDBTABLES-C00:VTM", "DDBTABLES-D00:VTM", "DDBTABLES-E00:VTM" and "DDBTABLES-G00:VTM".

Insert the diskette in a free diskette station. Execute the following commands (operator input is underlined>):

```
@ENTER-DIRECTORY-  
DIRECTORY NAME: 210455G<Rev>-XX-01-  
DEVICE NAME: FLOPPY-DISC-<drive no.>-  
DEVICE UNIT: <floppy-unit>-  
@(210455G:FLOPPY-USER)INSTALL-TABLES-
```

Note that the INSTALL-TABLES program will refuse to overwrite files with higher revision numbers than the tables it is supposed to install itself.

When the computer prompts "Installing finished", just

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remove the floppy diskette, and store it for safe keeping. Now all VTM-table dependant programs should work appropriately on your system.

If you are using standard terminal types only (listed above), there is really no need to read the rest of this program description, which is devoted to enabling users to assemble their own DDBTABLES.

### ASSEMBLING OWN TABLES:

If non-standard terminal types are to be used with ND full-screen programs, the user has to put together own DDBTABLES from DDBxxx files, using the VTM-ASSEMBLE program, or the older VTM-COMPOUND programs.

Before being able to change anything, the contents of this floppy diskette must be copied onto a user area, preferably an empty one, with at least 700 pages free space. When assembling is finished, the existing DDBTABLES- C, D, E and G on user area SYSTEM must be replaced by the newly created files. WARNING: Keep backup copies of the original files, for example by renaming them to "DDBTABLES-vxx:SAVE". Otherwise you might end up with a computer unable to run NOTIS-WP, or any other full-screen program. After a short test period to ensure the functionality of the new tables, the VTM-ASSEMBLE user area may be deleted.

DDBxxx-0 files may be assembled into all DDBTABLES versions, while DDBxxx-N files fit into DDBTABLES-E and G. DDBxxx-7S, 7B, 8S and 8B files are only usable with DDBTABLES-G. Note that some DDBxxx-0 files formerly were called DDBxxx-C or DDBxxx-A, while a few DDBxxx-N files were named DDBxxx-E. VTM-ASSEMBLE will refuse to include DDB files of newer format than allowed by the current DDBTABLES.

VTM file formats prior to G support only one DDBxxx- 0 or N file per terminal type. DDBTABLES-G however, should contain both DDBxxx- 7S, 7B, 8S and 8B files when available. Each file must be added separately.

This floppy diskette contains all the standard DDBxxx files. In addition, all DDBxxx files that have been standard in previous releases are included. More than 50 non-standard DDBxxx files may be ordered from Norsk Data, even though some of these offer very limited functionality. The table below shows which non-standard DDB files are included on the floppy diskette.

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Type	Terminal typename	C	D	E	G	DDBTABLES
4	Infoton 200-1	0	0	0	0	
5	Infoton 400	0	0	0	0	
6	DEC VT100 (80 col)	0	0	0	0	
7	Tandberg 2000	0	0	0	0	
11	DEC LA36 (DECwriter-II)	0	0	0	0	
36	Tandberg TDV 2215	0	0	0	0	
52	Tandberg TDV 2215 SDS V2	0	0	0	0	
57	Facit 4420 ND-NOTIS	0	0	0	7S	
79	IBM PC (ND-Link)	0	0	0	0	
91	Facit Twist ND-NOTIS (24-lines)	0	0	0	7S	
92	Facit Twist ND-NOTIS (72-lines)	0	0	0	7S	
99	Colortrend 210 ND-NOTIS	0	0	0	7S	
105	Butterfly Console ND-NOTIS	0	0	0	7S	

### USING VTM-ASSEMBLE:

Unlike the older VTM-COMPOUND programs, VTM-ASSEMBLE takes its input from text files. That is seven or eight bit ASCII, with upper bits stripped off. If Norsk Data sixteen bit or S-format documents, as default in NOTIS-WP, are specified as input files, a large number of error messages will appear on the screen. It is possible to use NOTIS-WP to convert such files. Simply resave them, after selecting "Storage format: 7" under "Menus", "WP-Environment".

VTM-ASSEMBLE builds DDBTABLES files from scratch, which means the program needs access to the DDB files of all terminal types that should be used with the system. Usually that would include all standard terminals.

A VTM-ASSEMBLE directive file specifies which DDB files should be included in the different DDBTABLES. The list of valid directives is given below.

DDB999	Selects DDB999-A:VTM file format for use with VTM A
ARRAY	Selects DDBARRAYS-B:VTM file format for use with VTM B
TABLE-C	Selects DDBTABLES-C:VTM format, VTM C
TABLE-D	Selects DDBTABLES-D:VTM format, VTM D
TABLE-E	Selects DDBTABLES-E:VTM format, VTM E and F
TABLE-G	Selects DDBTABLES-G:VTM format, VTM G
BRF-1B	Builds a 1Bank ND100 link file for current VTM version
BRF-2B	Builds a 2Bank ND100 link file for current VTM version
NRF	Builds a ND500 link file for current VTM version

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All directives may take up to two parameters, separated by spaces or commas in usual SINTRAN manner. The first parameter is the file name associated with the directive, the second is the name of an alternative file, which will be accessed if the first file name was ambiguous or not found. The second file name will typically be enclosed in apostrophes, making it create a file. All parameters in VTM-ASSEMBLE are optional and have default values.

When a VTM file format is selected, DDB files are added one by one to the resultant file, by specifying the last part of the DDB filename, starting with the first digits. For instance the directive 121-7S adds file DDB121-7S:VTM to the current VTM table.

Remarks may be placed at the end of any line in a directive file, by preceding them with percent characters.

A small directive file creating the four often used DDBTABLES files, each with four terminal types available, is shown below. Three more uncommon link files are also created.

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% Small directive file, four terminal types available on system

TABLE-C

% Create DDBTABLES-C, using default file names

% Only DDBxxx-0 files are allowed in DDBTABLES-C

006-0           % terminal type 6 (old format)  
053-0           % terminal type 53 (old format)  
113-0           % terminal type 113 (old format)  
128-0           % terminal type 128 (old format)

TABLE-D   DDBTABLES-D99           "DDBTABLES-D99"

% Create DDBTABLES-D99. Revision number 99 is a good idea  
% if you don't want other installation programs to delete  
% your system specific VTM tables files

% Only DDBxxx-0 files are allowed in DDBTABLES-D

006-0           % terminal type 6 (old format)  
053-0           % terminal type 53 (old format)  
113-0           % terminal type 113 (old format)  
128-0           % terminal type 128 (old format)

TABLE-E   DDBTABLES-E99:VTM       "DDBTABLES-E99:VTM"

BRF-1B

BRF-2B       VTM-2B-ARRAY-E99:BRF

% Create DDBTABLES-E99. 1Bank and 2Bank ND100 link files will  
% be created from the resultant DDBTABLES-E99

% DDBxxx-0 and DDBxxx-N files are allowed in DDBTABLES-E

006-0           % terminal type 6 (old format)  
053-0           % terminal type 53 (old format)  
113-N           % terminal type 113 (new format allowed)  
128-0           % terminal type 128 (old format)

TABLE-G   DDBTABLES-G99           "DDBTABLES-G99"

NRF       VTM-ARRAYS-G99:NRF       "VTM-ARRAYS-G99:NRF"

% Create DDBTABLES-G99 along with a ND500 link file

% DDBxxx-0, -N, -7S, -7B, -8S, -8B files allowed in DDBTABLES-G

006-0           % terminal type 6 (old format)  
053-7S          % terminal type 53 (seven bit, small buffer)  
113-7S          % terminal type 113 (seven bit, small buffer)  
113-7B          % terminal type 113 (seven bit, big buffer)  
128-7S          % terminal type 128 (seven bit, small buffer)



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The example above requires the files DDB128-0:VTM and DDB128-7S:VTM to be present on current user area when running VTM-ASSEMBLE. These terminal tables would have to be bought separately from Norsk Data.

The link files produced by VTM-ASSEMBLE are rarely used. A few programs, like VTM-COMPOUND, provide full screen interfaces, even when the available DDBTABLES files are corrupt. This is because they contain a separate DDBTABLES link file, placed in the programs at compilation time.

A VTM-ASSEMBLE terminal type name file contains all known terminal type numbers and names. The format of this text file is compatible with VTM-ALL-TYPES:VTM, used by VTM-COMPOUND. Terminal type names may be arranged in one or more columns, with leading terminal type numbers and colons. Terminal type 0 defines the unknown terminal type prompt.

VTM-ASSEMBLE takes two file names as command line parameters. The first is the name of a directive file, default VTM-TABLES:VTMA. The second is the name of a terminal type name file, default VTM-TYPE-NAMES:VTMA. Default file names associated with available directives are given below.

DDB999	DDB999-A:VTM	"DDB999-A99:VTM"
ARRAY	DDBARRAYS-B:VTM	"DDBARRAYS-B99:VTM"
BRF-1B	VTM-1B-ARRAY-B:BRF	"VTM-1B-ARRAY-B99:BRF"
BRF-2B	VTM-2B-ARRAY-B:BRF	"VTM-2B-ARRAY-B99:BRF"
NRF	VTM-ARRAYS-B:NRF	"VTM-ARRAYS-B99:NRF"
TABLE-C	DDBTABLES-C:VTM	"DDBTABLES-C99:VTM"
BRF-1B	VTM-1B-ARRAY-C:BRF	"VTM-1B-ARRAY-C99:BRF"
BRF-2B	VTM-2B-ARRAY-C:BRF	"VTM-2B-ARRAY-C99:BRF"
NRF	VTM-ARRAYS-C:NRF	"VTM-ARRAYS-C99:NRF"
TABLE-D	DDBTABLES-D:VTM	"DDBTABLES-D99:VTM"
BRF-1B	VTM-1B-ARRAY-D:BRF	"VTM-1B-ARRAY-D99:BRF"
BRF-2B	VTM-2B-ARRAY-D:BRF	"VTM-2B-ARRAY-D99:BRF"
NRF	VTM-ARRAYS-D:NRF	"VTM-ARRAYS-D99:NRF"
TABLE-E	DDBTABLES-E:VTM	"DDBTABLES-E99:VTM"
BRF-1B	VTM-1B-ARRAY-E:BRF	"VTM-1B-ARRAY-E99:BRF"
BRF-2B	VTM-2B-ARRAY-E:BRF	"VTM-2B-ARRAY-E99:BRF"
NRF	VTM-ARRAYS-E:NRF	"VTM-ARRAYS-E99:NRF"
TABLE-G	DDBTABLES-G:VTM	"DDBTABLES-G99:VTM"
BRF-1B	VTM-1B-ARRAY-G:BRF	"VTM-1B-ARRAY-G99:BRF"
BRF-2B	VTM-2B-ARRAY-G:BRF	"VTM-2B-ARRAY-G99:BRF"
NRF	VTM-ARRAYS-G:NRF	"VTM-ARRAYS-G99:NRF"

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ERROR MESSAGES:

VTM-ASSEMBLE has two warning messages. The first is:

Odd bytecount in DDB file,  
please test terminal type

If you get this message, test the associated terminal type, by starting a full screen program. If a SINTRAN error message like NO SUCH PAGE appears, the DDB file is corrupted. Contact Norsk Data to get a new one. It is not necessary to test the same DDB file again when assembling new tables. It will work as it did during the first test.

The second warning message is:

Some ND100 programs may fail to access  
last part of file ...

This problem is very uncommon with DDBTABLES-G, and the warning, which appears quite often, may be ignored. If, however, the warning appears while creating any other VTM file format, a terminal type should be excluded from the directive file, making the resultant file smaller. Otherwise the terminal type name list and often the last DDB file in the VTM table will be unusable for programs utilizing the ND100.

Below is a list of error messages defined in VTM-ASSEMBLE.

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No such file name  
Ambiguous file name  
File already exists  
No such page  
File already open  
File not open  
Incorrect access rights  
Random access not possible  
Unable to open requested file for write  
This program should never be executed by user SYSTEM  
Directive not recognized  
Illegal character in directive  
VTM table not selected  
Terminal type already exists  
DDB file format too new to be used here  
Unknown DDB file format encountered  
DDB file too large for maximum buffer size  
Terminal type name list too big  
Function not yet implemented  
Requested linker file can not be generated  
Linker file too large for ND100 bank  
Conversion mismatch, writing linker file  
Header mismatch, writing file header  
Header mismatch, writing terminal type  
Header mismatch, writing name list  
Fatal error while assembling

The mismatch errors are quite serious, and might indicate programming errors in VTM-ASSEMBLE itself. A fatal error will be displayed together with an appropriate SINTRAN error message.

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CHANGES FROM RELEASE G05 TO G06:

\* The following terminal types are now standard:

Type	Standard terminal typename	C	D	E	G	DDBTABLES
2	Teletype ASR 33	0	0	0	0	
3	Tandberg TDV 2115	0	0	0	0	
6	DEC VT100 (80 columns)	0	0	0	0	
53	Tandberg TDV 2200/9 ND-NOTIS	0	0	0	7S	
80	Tandberg TDV 2200/9 ND-NET	0	0	0	7S	
83	Tandberg TDV 2200/9 V2 ND-NOTIS	0	0	0	7S	
90	Tandberg TDV 2200/9S ND-NET	0	0	N	7S, 7B	
93	Tandberg TDV 2200/9S ND-NOTIS	0	0	N	7S, 7B	
100	Tandberg TDV 2200/9S 25 ND-NET	0	0	N	7S, 7B, 8S, 8B	
103	Tandberg TDV-2200/9S 25 ND-NOTIS	0	0	N	7S, 7B, 8S, 8B	
106	Nokia ND-Display Terminal 301	0	0	N	7S, 7B	
110	Tandberg TDV 1200/1 ND-NET	0	0	N	7S, 7B	
113	Tandberg TDV 1200/1 ND-NOTIS	0	0	N	7S, 7B	
121	Wordplex 80/90	0	0	0	7S	
131	DEC VT220 (Multinational mode)	0	0	0	7S	
132	DEC VT220 (National mode)	0	0	0	0	
134	DEC VT100 (132 columns)	0	0	0	0	
135	ANSI Standard Terminal	0	0	0	0	

\* Description files for all terminal types that have been standard in earlier releases are included. VTM-ASSEMBLE must be used to create VTM tables containing these:

Type	Terminal typename	C	D	E	G	DDBTABLES
4	Infoton 200-1	0	0	0	0	
5	Infoton 400	0	0	0	0	
7	Tandberg 2000	0	0	0	0	
11	DEC LA36 (DECwriter II)	0	0	0	0	
36	Tandberg TDV 2215	0	0	0	0	
52	Tandberg TDV 2215 SDS V2	0	0	0	0	
57	Facit 4420 ND-NOTIS	0	0	0	7S	
79	IBM PC (ND-Link)	0	0	0	0	
91	Facit Twist ND-NOTIS (24 lines)	0	0	0	7S	
92	Facit Twist ND-NOTIS (72 lines)	0	0	0	7S	
99	Colortrend 210 ND-NOTIS	0	0	0	7S	
105	Butterfly Console ND-NOTIS	0	0	0	7S	

Users that have bought non-standard terminal tables, will be able to use these directly with VTM-ASSEMBLE.

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- \* Terminal type 6 for DEC VT100 has been extended to utilize the additional function keys on a Wyse WY120 terminal in VT100 mode. A new 132 columns per line terminal type, number 134, is suitable for both terminals.
- \* Terminal types 131 and 132 for DEC VT220 are new. Very few accent characters are available when the VT220 is in national mode. Otherwise, the two terminal tables are equal.
- \* Terminal type 135 has been made especially for the SCO XENIX console, but all ANSI compatible terminals and emulators will run happily on this terminal table, which has a very limited output character set, but translates easy to learn key sequences to NOTIS keys.