



NETCC Ver 3.0

Personal computer software for
Color Cells moving signs
including
MODEM support.

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This edition applies to sign model types CC784NET, NC900, NC9141 and NC9191; and NETCC version 3.0 or later.

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INTRODUCTION

NETCC is a software program for IBM PC/XT/AT and compatibles. It allows you to create and display messages on a Color Cells multi-color moving sign or network of moving signs using your computer PC. Messages created on the computer can be saved on the disk for future use.

We suggest you read through the Signs' instruction manual and do the examples provided to familiarize yourself with how the signs operate.

BACKUP NETCC!

Before you use the NETCC program, make a backup copy on the disk using the DOS commands copy or diskcopy. NETCC is not copy protected. Please support our policy by not giving away copies to people who have not paid us for them.

PACKING LIST

Your package will contain some or all of the following items depending on whether you purchased NETCC together with a sign or as a separate NETCC kit.

- i. 5.25" floppy disk containing:

NETCC.EXE	The main program
CC900.HLP	A file containing the HELP information
CC6X7.HLP	Further HELP information
WELCOME.CC	A demonstration message
TELELIST.EXE	Modem telephone list editor
SETUPMOD.EXE	Modem setup and installation program
MODEM.DAT	The remote modem setup string
 - ii. A template for the function keys on your PC
 - iii. This instruction booklet
 - iv. Cable with 25 pin D type to 9 pin D type **OR** Adaptor Cable for CC784NET
- If any of these items are missing from your package, please immediately contact your distributor for assistance.

GETTING STARTED

SYSTEM REQUIREMENTS

Color Cells NETCC requires the following hardware:

- * An IBM Personal Computer or "compatible" that runs MS-DOS or PC-DOS Version 2.1 or later.
- * At least 1 floppy disk drive (a hard disk is recommended).
- * At least 320K of installed memory.
- * CGA, EGA or VGA monitor (for best color operation).
- * RS232 COM port - [2 COM ports are recommended for Modem connected networks].
- * Standard 25 pin Female to 9 pin Male adaptor or cable (for 25 pin COM port).

CONNECTING YOUR PC TO YOUR COLOR CELLS SIGN

For NC900, NC9141 or NC9191 use the included cable and simply plug the 25-pin end (larger) into the COM port on your computer and the 9-pin end into the socket marked "COM1" on the back of your sign.

For CC784NET, firstly ensure that your sign and your PC are turned off and disconnected from the power. Then take the 'Adaptor Cable' included with your sign package and plug the female plug, which is at the junction of the two cables, into the back of your CC784NET sign.

NOTE - DO NOT PLUG ANY OTHER CABLE DIRECTLY INTO YOUR CC784NET AS IT MAY DAMAGE YOUR SIGN.

Then to connect your PC, you can do one of two things depending on the location of the signs relative the PC and the type of COM port on your PC.

If the COM port on the back of the computer is a 9-pin type, you can simply plug the free female connector on the adaptor directly into your computer or use an extension cable to reach the computer.

If the COM port on the back of the computer is a 25-pin type, you will need to buy a 25-pin female to 9-pin male converter plug/cable to plug into your PC and then you can simply plug the free female connector on the CC784NET adaptor into the 9-pin male plug at the end of the converter at the computer, directly or via an extension cable.

The remaining free plug on the CC784NET adaptor can then be connected to the next CC784NET adaptor directly or via an extension cable. Please refer to page 29 for details.

You can now turn on your display and computer. It is **IMPORTANT** that the power be **DISCONNECTED** whenever you connect the cable onto the Sign.

If you are setting up a network of signs, please refer to the section on how to set each sign's address on page 25 of this manual

BACKING UP YOUR DISK

The first thing to do before you use your disk is make a backup copy. You can use the DOS Diskcopy command as follows:

- * Place the distribution disk in drive A and a disk for the backup in drive B

Type: DISKCOPY A: B: [ENTER]

Put the distribution disk in a safe place and use the backup from now on. If ever the backup is damaged or destroyed, you can always make a new copy from the distribution disk.

INSTALLING NETCC ON YOUR HARD DISK

- * Place NETCC disk in drive A:
- * Select Hard disk drive
- * Select root directory
- * Make the Color Cells directory
- * Change to the Color Cells directory
- * Copy the files from the floppy disk

```
C: [ENTER]
CD\ [ENTER]
MD\CC [ENTER]
CD\CC [ENTER]
COPY A:*.* [ENTER]
```

INSTALLING NETCC ON A FLOPPY DISK

No installation is required. However, ensure that you have made a copy of the distribution disk as advised above, and use this copy to run NETCC.

YOUR FIRST SESSION

Before starting these exercises you should have installed NETCC on your hard disk or a backup working copy of the floppy disk, and have connected your sign or network to your PC using the cable and/or hardware supplied.

STARTING NETCC

To start NETCC firstly go to the directory where you have installed NETCC. For example, if you installed NETCC in a directory called "CC" on your hard disk drive, type:

```
CD \CC [ENTER]
```

Once you are in your NETCC directory, then type:

```
NETCC [ENTER]
```

If NETCC does not start, make sure all the files are in your directory and that you are in the correct directory and try again.

NOTE: There are many other options available when starting NETCC - see the section on Command Line Parameters

If this is the first time you have used this program you will be also be prompted for the model type - simply press the number corresponding to the Model type you are using. i.e. "1" for CC784NET or "2" for NC900, NC9141 or NC9191

You will then be prompted: "Please enter local COM number 1=COM1 2=COM2. This COM number is the DOS number for the RS232 port of your "local" sign (ie connected directly to your PC without modems). It will be 1 or 2. After you determine which it is, simply press the number. Next you will be asked for the COM number for your remote or modem connected signs. You can select the same number, however generally you would have "local" on one COM port e.g. COM1 and "modem" on the other e.g. COM2. You can change the selection at any time by pressing [F3] C.

If you are using a NC900, NC9141 or NC9191 display you will then be prompted for the data transmission speed - please refer to the table following for settings. For CC784NET users, the program will automatically select 300 baud.

MODEL	Local Network	Remote Network 1200 Modem	Remote Network 2400 Modem
NC900, NC9141 NC9191	9600	1200	2400

MAKING A MESSAGE

The program asks "Do you wish to enter a message Y/N(Y)". Press the Y key or simply press [ENTER] for the default Yes as shown in brackets in the question.

The screen now says "Please type in your message and press ENTER when finished".

The portion of the screen below this line, and down to the line near the bottom of the screen, is available room for you to type your message. The total allowed is 1,360 characters, but it is generally recommended that your message be kept short and to the point so as to get maximum impact from your Sign. One or two lines of text per message is normally ample.

The bottom line of the screen tells you the current character pointed to by the cursor, and the total number of characters in your message. It will currently read "Character 1 of 1 is ..<END>.". The end character indicates the final character of your message.

To type in a message simply use the keys like a typewriter. If you make a mistake, press the <-- [back space] key to remove the last character typed, or press it multiple times to remove more characters. For this exercise, type:

HELLO WORLD

It is advisable to use capital letters as these have much more impact and size on the display.

Now that your message is typed in, press [ENTER]

SAVING YOUR MESSAGE ON DISK

The program will now ask you "Do you wish to save this message on disk Y/N(Y)?". Press Y.

Because this is a new message, the program will now prompt: "Please type in name and press ENTER (8 letters max)".

Type in WORLD and press [ENTER].

This is the name you have given this message. Each message is given a different name containing a maximum of eight letters. It is stored on the disk under this name.

NOTE: You can save your message at any time by pressing:
[F2] S

SENDING YOUR MESSAGE TO THE SIGN

The program will now prompt: "Do you wish to send this message to the sign Y/N(Y)?". Press Y.

You will be prompted for the address of the display where the message is to be sent, type the address or type "A" to send the message to all signs or type "M" followed by a series or range of addresses to send the message to multiple signs (i.e. 3,1,7, or 2-5,7,9) or remote network users (using modems) have the additional option of typing "R" and thereby sending the message to all remote modems. Then press [ENTER].

You will now be prompted: "Please type in channel number in sign 0 to 9 (0)". The program can address the first 10 memory channels in the Sign, numbered 0-9, the contents of which are displayed in the dialogue window printed on your screen. This means that you can store up to 10 different messages in the Sign, and display them individually or combined as you wish, using the sequence command - refer later section.
Type: 0 [ENTER]

You will now be prompted: "Send message to channel and display it Y/N (Y)".

If you type "Y" or "Enter", your message will be sent and displayed immediately. If you type "N" you will be prompted "Send message and no change in sign Y/N (Y)".

If you type "Y" or "Enter", your message will be sent but will only be displayed if sent to the memory channel currently displaying on the sign. (i.e. the order of memory channels displayed remains unchanged). If you type "N" you will be prompted "Enter channel number in order to be displayed".

You then type a sequence of one or more channel numbers followed by "Enter". Typing "A" followed by "Enter" will send a sequence of all messages. Your message will be sent to the sign after which, the channel numbers which you entered will be displayed. (This allows you to change the order of memory channels displayed in the sign).

NOTE: You can send a message at any time by pressing [F3] M

At this point you can view your message on the Sign and change it if you are not satisfied.

The program will prompt: "Do you wish to edit this message Y/N(Y)?". Press N.

LOADING A MESSAGE FROM THE DISK

Messages previously saved onto the disk can be retrieved and edited and sent to the Sign.

On your distribution disk is a message called WELCOME (the filename is WELCOME.CC). We will now load this onto the screen.

You will be prompted: "Do you wish to load a message from disk Y/N (Y)?". Press Y.

Alternatively you can press [F2] L to load a message from the disk at any time.

If you already have a message on the screen the program will prompt: "Do you wish to lose this current message Y/N (N)?"

If you have not saved the message previously you should press N and then press [F2] S to save the current message first. However, as we have already saved WORLD, we press Y.

On the screen is printed a dialogue box (green) showing the contents of memory of your Sign. It will show at this stage 2 messages : in channel 0 WORLD, and in channel 1 WELCOME. With a star (*) beside channel 1 indicating that this is the current message actually running on the display.

Let us display both messages one after the other:

The screen prompts: "Enter channel numbers in the order to be displayed". As we wish to display both messages and we wish WELCOME to be displayed first and WORLD second, we type: 1 then 0, then press [ENTER]. The sign(s) will now display these messages in that order.

CLEARING A MESSAGE OUT OF THE SIGN

There are two methods of removing a message from the Sign.

The first is to simply replace it with another message by sending a new message to the same channel number. In this case you would use the [F3] M (send message) command.

Alternatively you can use the [F3] K ("Clear a message" in Sign commands) which asks you to enter the address of the signs and then the number of the channel you wish to clear. In addition, this command allows you to clear the complete sign by typing A (for all channels) in response to the question for the channel number.

You can clear the entire local system by selecting 'A' for all the signs or all the modem signs by pressing 'R' or a selection of signs by pressing 'M' followed by a list of sign numbers. Then select 'A' for all the channels when asked for the channel number.

EXITING TO DOS

To exit to DOS two commands are provided. They are:

[F2] Q - Quit - you will be asked if you wish to exit without saving, to which you can respond Y if you wish to exit.

or

[F2] E - Exit and Save - this command first saves the file and then exits to DOS.

The program will now ask you: "Please type in name and press ENTER (8 letters max)" and list in the text area all the messages you have on the disk. Currently it should display 2 messages - WORLD.CC and WELCOME.CC.

Type WELCOME and press [ENTER].

The message WELCOME will now be displayed on the screen. You should now send this message to your Sign by:

Press [ENTER]

Press N - we don't need to save this message on disk

Press Y - we do want to send this message to the Sign

Enter "A" for all signs when prompted for the Sign address.

Press 1 [ENTER] we will send it to channel 1 on the Sign.

Press Y to display this message.

The Sign will now display the WELCOME message

Press N - we don't want to edit the message now

Press N - we don't want to load a message

Press N - we don't want to enter a new message at this stage.

However, we do wish to change the sequence - as we will describe in the next section.

NOTE: As an alternative to the above question and answer method, loading and sending a message can be achieved more quickly using the function keys. Press F1 for a list of all the short cut function keys as indicated on the template. You would press [F2] L to load a new message, then press [F3] M to send the new message to the Sign.

SETTING THE SEQUENCE

NETCC can store 10 different messages in your sign's first 10 memory channels. Whenever you send a message to the Sign(s) they will generally run that message only (depends how you sent the message - see "Sending your message to the sign" on page 10). It is possible, however, to tell the Sign(s) to run another of the messages stored in its channels, or to run a combination of some or all of the messages. This is called a sequence of messages.

If you have been following the examples above the screen will be prompting: "Do you wish to change the sequence on the sign Y/N (Y)?", in which case press Y.

You can select the sequence command at any time by pressing [F3] S.

You will be asked to enter the sign address at this point - simply enter the number of the sign or "A" to adjust the sequence of all the signs.

EDITING FUNCTIONS

Editing functions are used to make or edit a message. They fall into 4 categories - Inserting characters or special effects, moving the cursor, deleting characters or special effects and searching for and replacing words.

INSERTING A CHARACTER

Pressing a letter, number or special effect command will cause a character to be inserted into the message at the current cursor position. If a character currently occupies that position and "Ins" is displayed at the bottom right corner of the screen, then this character and those following are moved up to make room for the character you have just typed. Alternatively, if "Ins" is not shown then this character will overwrite the one at the cursor.

For example, if the message is HELLO WORLD with the cursor under the D as indicated by the flashing underline, and you press the letter O, then the letter O will be inserted at that position and the D shifted up, ie: HELLO WORLOD.

Entering or inserting special effects is achieved by pressing the relevant function key [F4] to [F10] and the corresponding letter indicating the effect wanted. A highlighted format is used to differentiate between normal text and special effects. The special effect characters are not shown on the Sign when the message runs. You can see to which effect a particular symbol refers by either positioning the cursor under the character and looking at the bottom of the screen to read the type or by pressing F2 [X] to view your message with all the highlighted symbols expanded.

MOVING THE CURSOR

The cursor can be moved to any position on the screen within the current message. It can not be positioned beyond the end of the message. Moving the cursor has no effect on the message contents. Keys that move the cursor:

<- Left pointing cursor key. This moves the cursor one character to the left.
--> Right pointing cursor key. This moves the cursor one character to the right.

Up pointing cursor key. This moves the cursor to the line above.
Down pointing cursor key. This moves the cursor to the line below.

HOME This key moves the cursor to the beginning of the line it is currently on.
END This moves the cursor to the end of the current line.

PgUp This moves the cursor to the start of the message.
PgDn This moves it to the end of the message.

DELETING CHARACTERS

There are three methods of removing or deleting a character(s):

Delete - This key removes the character above the cursor and moves all the keys following the cursor down to fill in the gap created.

<--- Backspace - this key removes the character before the cursor, and is usually used to remove the last character typed in. It is similar in function to the correction key on an electric typewriter.

[F2] C This key combination will prompt you to remove all the characters and clear the message from the screen. If you respond by typing Y the screen will be cleared. This does not remove a saved copy of this message from the disk.

SEARCHING FOR AND REPLACING WORDS

[F4] S will search for the occurrence of a word or phrase. You can either start searching at the cursor position or at the beginning of the message.

[F4] R will replace a word or phrase with another. It uses the same format as the SEARCH command.

INSERT OR OVERTYPE SELECTION

Pressing the insert key (Ins) will toggle between INSERT mode ("Ins" shown at bottom right of screen) and OVERTYPE mode ("Ins" not shown) when you are editing your message.

FASTER EDITOR USING MONOCHROME FORMAT

The message editor can be switched between Color and monochrome editing using the [F4] C and [F4] B commands. Monochrome mode is faster. The program will default to Color on startup unless the command line parameter /B is added (see the section on Command Line Parameters).

FILE, MESSAGE AND SIGN COMMANDS**FILE COMMANDS**

File commands are accessed using the [F2] key. This key allows you to save and load messages onto your disk, create new messages, exit to DOS and clear a message from the screen.

- [F2] S Save message onto disk
- [F2] A Save message onto disk using a new name
- [F2] E Exit to DOS after saving the message on disk
- [F2] Q Exit to DOS without saving the message
- [F2] L Load a message from the disk onto the screen for editing and/or sending to the Sign.
- [F2] C Clear the current message on the screen
- [F2] N Start a new message
- [F2] I Insert a previously saved message into the current message at the cursor position.
- [F2] D Deletes a message off the harddisk.
- [F2] X Displays the message on screen with all the special effects symbols expanded into words.
- [F2] P Prints out the Network send log file NETCC.LOG.

SIGN COMMANDS

The Sign commands are accessed using the [F3] key. It allows you to Clear messages from the Sign, send a message to the Sign, change the COM ports, set the real time clock in the Sign and change the Sign display sequence.

- [F3] K Clear a message(s) from the Sign

- [F3] M Send the displayed messages to the Sign.
- [F3] G Send a group of messages to a group of signs..
- [F3] S Change and set the sequence to display the messages stored in the Sign.
- [F3] A Adjust or set the time and date on the Sign
- [F3] C Change the COM ports (either COM1 or 2)
- [F3] O Select Model type for the type of Sign(s) you are using.
- [F3] D Direct Comms - i.e. keys pressed are directly sent to sign(s).

GROUP AND SEND MESSAGE COMMAND

The group and send message command is accessed using the [F3] G key selection. This is a very powerful command which allows you to send different messages to different signs or to the same sign at one time. You create a list of messages that you wish to send to the signs and then the computer sends out all the messages at the same time. A delayed transmission feature is provided which allows you to create the list and tell the computer to send the messages at some time in the future.

When you press [F3] G to select Group and Send. You will be prompted for a message filename, sign address and channel number. You have the option to either send and display the message immediately, send it without changing the sequence in the sign or send and change the sequence in the sign.

You will then be asked "More Entries to input (Y/N) Y?". If you have, you simply repeat the above process with another message (or the same one) and another sign address (or the same one) and channel number. You repeat this process until you have input all the messages, with corresponding sign addresses and channel numbers, that you want to group and send together.

When you have no more entries a table will be displayed showing all the messages that you have input. On each line of the table will be (from left to right), the table line number, the message name, the sign address to which it will be sent, the channel number where it will be stored and lastly, the sequence (if any) that will be sent along with the message. This information will be stored on your disk in a file called NETCC.CMD.

If you did not choose to send a sequence then the "Display" column will simply show "Update" meaning that the message will be displayed as soon as it is received by the sign.

You will then be asked "Is this correct Y/N (Y)". If the table is not correct, press "N" and you will be given various choices to modify your selection. If you press "Y" you will be prompted "Send Group message now Y/N (Y)". If you choose to send now, the group of messages will be sent and afterwards, a status report will be displayed. You can print the report if you wish.

If you do not want to send the group now, you will be asked for a date (the default is today's date) and time when the group is to be sent. NETCC will then wait until the chosen date and time and then send the group of messages. While waiting, the screen will be blank except for a scrolling status bar showing the chosen send time and the current time. (You can get back to NETCC by pressing any key).

The next time you select the Group and Send command, you will be asked "Use last Group send file Y/N (Y)". If you press "Y" then all the information from your last group send command will be displayed on the screen (this is saved, after each group send command, in a file on your disk called "NETCC.CMD").

It is possible to do a group send command from the DOS command line using NETCC.CMD and the /G command line parameter (see the section on Command Line Parameters).

SPECIAL EFFECTS

Special effects are effects you can include in your message to give it greater impact and create interest. They include different letter styles, movements, colors and miscellaneous items such as speed, time and beeping. These characters are treated just like ordinary letters, and can be inserted and deleted as you would a letter or number.

LETTER STYLES

Five different letter styles are available. These can be used together or individually to provide greater variety. They are accessed by pressing the [F6] key and the letter indicated corresponding to the letter style selected. The style should be entered prior to the word or letters to be displayed in that style. Styles are not displayed on the computer, but only when the message is run on the Sign.

[F6] I Italic letter style eg *ITALIC*

[F6] B Bold letter style eg **BOLD**

[F6] L Large letter style eg **BIG**

[F6] F Flashing letters. The flashing style character should be inserted immediately in front of the word to be flashed. Any space before the word will automatically turn the flash off.

[F6] N Normal style. This command also turns off all the above styles.

[F6] Y Thin style. This command changes the default style for JUMP, UP and DOWN from a bold style to normal size characters.

EXAMPLE: If we wished to display the price \$9.99 in a bold style with a flashing dollar symbol, we would use the following keys:

[F6] B to select a bold style

[F6] F to select flashing characters

\$

[F6] N to turn flashing off (bold is also turned off)

[F6] B to turn bold back on

9.99 to enter price.

MOVEMENTS

Movements determine how your message is displayed. The default (i.e. if you don't set any movement) is CRAWL. This movement is the letters moving across the screen from right to left. Other movements you can use are JUMP, UP, DOWN and BACK.

NOTE: Whenever you use a movement other than CRAWL, the color will always be yellow. The letter style will be BOLD, unless THIN ([F6] Y) has been previously inserted into the message.

Movements are activated by using the [F7] key and pressing the corresponding letter. The movement command should immediately precede the word and the CRAWL movement should follow the word. No spaces are required.

[F7] C CRAWL This is the default; it causes your message to be displayed running across the screen from right to left. It is also used to turn off any of the other movement commands.

[F7] J JUMP Causes the following characters to jump immediately onto the screen. It should be entered directly in front of the word to jump and the crawl movement immediately after. See example below.

[F7] D DOWN Cause the following characters to wipe or roll down onto the screen. It should be entered directly in front of the word(s) and the crawl movement immediately after. See example below.

[F7] U UP Causes the following characters to wipe or roll up onto the screen. It should be entered directly in front of the word(s) and the crawl movement immediately after. See example below.

[F7] W BACK Causes the following characters to wipe or run back across the screen. It should be entered directly in front of the word(s) and the crawl movement immediately after. See example below.

[F7] P PAUSE This command causes all other movements to stop and pause for one second. If it is used with a movement other than CRAWL it will cause the movement to pause at that point in the message. It is therefore useful for separating a series of jumping words.

[F7] X WAIT This command cause the message to pause indefinitely on the sign and wait until a new message is received.

EXAMPLE: The following sentence will jump and wipe:

[F7] J select jump movement
HELLO type in word with no spaces in front or behind
[F7] C end of jump movement (also CRAWL selection)
[F7] W wipe back movement
WORLD
[F7] C end of wipe back and reset to CRAWL.

The word HELLO will jump onto the screen and wait for 1 second and then the word WORLD will wipe backwards over it. Then WORLD will crawl off from right to left.

COLORS

The Sign can display many different letter colors and background colors. These colors can be used to color individual letters or words. The default color selection is yellow letters on a black background.

NOTE: Colors are not selectable within a movement other than CRAWL. In addition to selecting your own colors, a special MAGIC [F5] feature is selectable which will automatically color and style your message differently each time it runs.

Colors are selectable using the [F9] key.

Foreground (letter) colors are selected by pressing the [F9] key and then the **UPPERCASE** letter corresponding to your selection. An indication of the color is shown on your PC display. However, it is only an approximation for indication purposes only.

Foreground colors selectable are Red, Orange, Yellow, Lime, Green and Black.

Background colors are also selected using the [F9] key; however, the color is selected using the corresponding **lower case** letter. Background colors selectable are Red, Green, Yellow and Black.

Magic which automatically colors and adds styles to your message when it is running is displayed on your PC in light blue. If you select a color after the MAGIC command it will specifically color the next word the selected color. MAGIC is selected by pressing [F5].

MISCELLANEOUS

SPEED

Seven different speed settings can be selected to vary your message speed. The Sign defaults to a speed that has been found most effective for displaying color. You can however adjust the speed of the message at any point in the message. To do this you use the [F10] key followed by a number between 1 and 7. 1 is the fastest and 7 the slowest. It should be noted that using speeds slower than 4 with red or green may cause flickering on the display.

REMARK / COMMENT

[F10] R - This key combination enables you to embed remarks and comments within your message for your own future reference. These comments are not displayed on the Sign(s) when the message is running. To embed a comment or remark press [F10] R before and after the comment text.

BEEP

The beep command selected by pressing [F10] S causes the sign to sound an audible beep at that point in the message.

TIME

Your sign incorporates a clock. Inserting or including the time command ([F10] T) in your message will cause the sign to display the actual time at that point in the message, showing hours, minutes and AM or PM. (Please refer to previous section on Sign Commands for instructions as to setting the correct time.)

DATE

In addition to the time, models NC900, NC9141 and NC9191 can display the date. This is selected by [F10] V.

TIME AND DATE DISPLAY ON SCREEN

This data is displayed in white letters on a green background in top right hand corner of the display.

OTHER MISC FUNCTIONS

Other miscellaneous functions are included for specific network and linking applications they are:

[F10] E - this is used in a linked systems sign to allow a message to run from the screen of one sign to the screen of another as if they were one long sign. (Applicable only on NC900, NC9141 and NC9191 with linking cable attached)

[F10] K - this function has the same effect as the above mentioned however is used at the beginning a new message. (Applicable only on NC900, NC9141 and NC9191 with linking cable attached)

[F10] O - This is a linking function and is used to synchronized stop modes. (Applicable only on NC900, NC9141 and NC9191 with linking cable attached)

[F10] Q - This function will cause the screen to blank instantly at that point in the message. (Applicable only on NC900, NC9141 and NC9191 with linking cable attached)

GRAPHICS

PREPROGRAMMED

Pre-programmed graphic characters are available for selection and insertion into your message. These are the same graphics as printed on the Sign's keypad. An indicative graphic is displayed on your PC; however, this symbol should not be considered a facsimile of the actual graphic on the Sign.

To select a graphic, simply press [F8] and the character corresponding to your selection.

USER GRAPHICS

By pressing [F10] G you can access the user graphic program. This program allows you to create, edit and insert your own graphics such as logos, foreign characters and special symbols into your message. Your PC displays the easy to use commands on its screen when you access this feature.

NETWORKS - LOCAL, REMOTE AND MODEMS

NETCC supports programming a network of displays. These displays can be located within a building, across town or across the country. Each Sign is connected to the PC directly or through a telephone line via modems. A modem is a device which converts the PC's data into tones which can be transmitted across the telephone system to another modem which does the opposite by converting the tones back to digital data that the display can use.

MODEM REQUIREMENTS

NETCC supports the industry standard Hayes compatible modems and is suitable for use with 300, 1200 or 2400 baud models. A standard RS232 DTE to DCE cable is required to connect the PC to the Host modem and a cable is required for each remotely located display to connect it to its modem (a diagram of the minimum connections is shown on page 30).

USING NETCC WITH MODEMS

To use NETCC with a remote network you must have a modem connected to your PC and have created a file called NETCC.TEL. Included on the distribution disk is a program called TELELIST.EXE which allows you to create and edit a telephone directory for your network.

Each sign address can be allocated a telephone number in this file, for example sign address number 1 could be telephone number 2123456789 and sign address 17 could be 8525297761 and so forth. Each time NETCC needs to send data to a particular sign address it looks into this file and if it finds an associated telephone number it dials up the telephone number and establishes the necessary link. Any address not included in this telephone directory will be assumed to be local and accessed directly without dialing the modem.

To use this program simply type at the DOS prompt:

TELELIST [ENTER]

SETTING UP YOUR DISPLAYS MODEMS

Each display in a remote network has its own modem. These modems have to be configured so that they can answer the telephone automatically and receive the message and hang-up unattended. Included on your distribution disk is a program called SETUPMOD.EXE which will do this configuration.

To use this program firstly connect the signs modem(s) (**NOT the host computer modem**) to the PC using the standard DTE-DCE cable, then run the program by typing SETUPMOD.EXE [ENTER]. You will be prompted for another modem which you connect to repeat the setup. The modems are then ready to be installed at the remote location. The actual configuration information is stored in a file called MODEM.DAT which can be edited for any particular special requirement using a text editor such as EDLIN etc.

NOTE

DO NOT USE THIS PROCEDURE ON THE MODEM DESTINED TO STAY LOCATED AND CONNECTED TO THE HOST PC WHEN THE NETWORK IS IN OPERATION.

The standard remote configuration is: AT B1 M0 E0 Q1 V1 X1 S0=1 S11=55 S7=60.

SETTING THE SIGN'S ADDRESS

Each sign in your network **must** be given an individual address. This is a number between 1 and 254 (except 42) that is stored in the sign. This number is the address used when you want to program a specific sign on the network.

To set the address in a particular sign:

1. Disconnect the power.
2. Disconnect the adaptor cable from the sign.
3. Plug the keypad into the sign.
4. Power-on the sign.
5. Press to freeze the message.
6. Press to access the address.
- the display will show:
7. Type in your selected address for that sign, e.g. 176
8. Press to enter the address.
9. Press to clear the sign's memory.
10. Press to run the sign.
11. The sign will run the 'DEMO' message and the address is now set. Disconnect the power and unplug the keypad. Plug in the adaptor cable again and power-on the sign again.

Your sign is now ready to work on the network.

COMMAND LINE PARAMETERS

NETCC has a number of additional functions which are made available through command line parameters. You obtain these additional functions by entering parameters on the command line when you start NETCC. These parameters can be included singularly or together. They must however include the "/" character.

SELECT MONOCHROME EDITING MODE (FASTER OPERATION)

To select monochrome editing mode which operates faster than color editing, type "NETCC /B [ENTER]"

DISABLE OPENING LOGO

To start NETCC immediately without displaying the opening logo, type "NETCC /L [ENTER]"

SELECT MODEM NETWORK WITH ADJUSTABLE TIME-OUT

To allow use of modems in systems that require more than 2 rings, the time-out can be adjusted and consists of up to 3 digits placed immediately after the /M (ie /Mnnn). The 3 digits can be between 0 seconds and 256 seconds with 30 seconds being the default if a value is not used. For example to run modems that require 10 rings you would type the command line "NETCC /M120 [ENTER]" for a 120 second maximum carrier wait time.

NOTE: You will have to configure your modem as well. This function only causes the sign to wait that period of time for the modem to answer.

AUTOMATIC CORRECT TIME ADJUSTMENT OF SIGNS WITH EVERY TRANSMISSION

Including /T as part of the NETCC command line will cause NETCC to update the date and time in each display every time it connects to them to send a message. Type "NETCC /T [ENTER]"

SEND A GROUP OF MESSAGES AND EXIT TO DOS

This option causes NETCC to immediately go to the group send function, send the group NETCC.CMD and then exit to DOS. Type "NETCC /L/G [ENTER]"

You can also specify /GTtime (eg /GT13:56) and/or /GDdate (eg /GD10-24-91) in the command line to indicate a date and time for the messages to be sent. If either one or both of these parameters are specified, NETCC will wait for the date and time, send the messages and exit to DOS. If only /GT or /GD is specified, NETCC will assume the current time or date for the parameter or parameters not specified.

There are two other command line options which you can use with the group send command line parameter - the command file option and the append NETCC.LOG option.

GROUP AND SEND COMMAND - /F COMMAND FILENAME

The command filename is the name of the group commands file, called NETCC.CMD by default, which is generated by NETCC for group operations. The /F parameter allows you to give the command file a name of your own choice. **NOTE** - if you generate this file outside of NETCC, it may not be line "ordered" for the most efficient modem use. In this case, rename the user command file to NETCC.CMD, start NETCC and select group send. Use the old group file, re-order it and then exit. You can then rename the re-ordered NETCC.CMD to your user name. This will ensure that unnecessary dial-ups are not done.

GROUP AND SEND COMMAND - /A APPEND NETCC.LOG

NETCC.LOG is the name of the transmission log file. This is a status report of which messages were sent, where they were sent and if they were successfully sent. Normally NETCC.LOG is overwritten every time a new group is sent. The /A parameter causes subsequent status reports to be appended to NETCC.LOG, instead of overwriting the file. This allows you to specify this option in a batch file and review all logged messages at once. For example, a typical, batch file could be:

```
NETCC /L /G /FSEND1.CMD
NETCC /L /GT06:00 /FSEND2.CMD /A
NETCC /L /GT12:00 /FSEND3.CMD /A
NETCC /L /GT18:00 /FSEND4.CMD /A
```

This batch file clears NETCC.LOG when the first group is sent. Then the other group sends only append messages to the log file without overwriting it.

Here are some typical examples of possible command lines using the automatic group send commands .

- i. **NETCC /L /G /A**
This sends the default file NETCC.COMD immediately and then exits to DOS. The transmission log information is added to the end of NETCC.LOG.
- ii. **NETCC /L /G /FTEST.COMD**
This sends the group TEST.COMD immediately and then exits to DOS. The transmission log information is stored in NETCC.LOG.
- iii. **NETCC /L/T/GD10-24-92 /GT16:30 /FTEST.COMD /A**
This starts NETCC and waits until 4:30pm on the 24th October 1992 and then sends the group file TEST.COMD, adding the correct (SYSTEM) time to each message and appending the log information to NETCC.LOG.

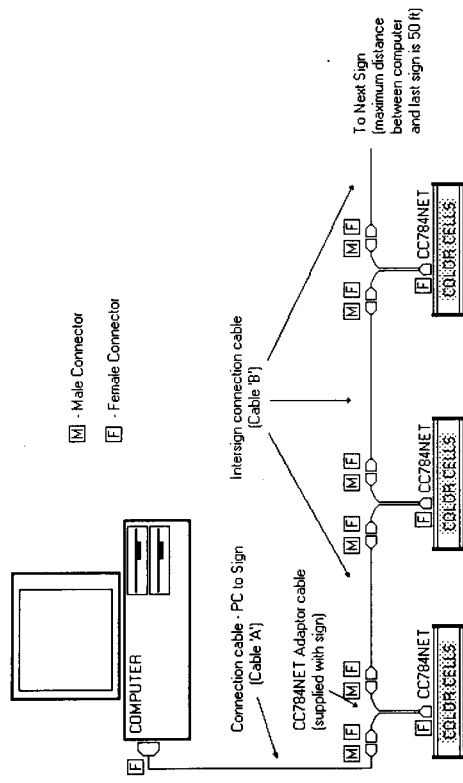
SUMMARY OF COMMAND LINE PARAMETERS

- /L Disable opening logo
- /B Select monochrome editing mode (faster operating)
- /T Adjust time in sign with every message sent.
- /Mnnn Select modem delay, nnn = carrier wait in sec's (max 256)
- /G Group Send
- /A Append Log File

EXAMPLE NETCC /T/L/B/M120

CABLE DIAGRAMS FOR NETWORKING CC784NET

LOCAL NETWORK



CABLE 'A' - PC TO SIGN CONNECTION CABLE

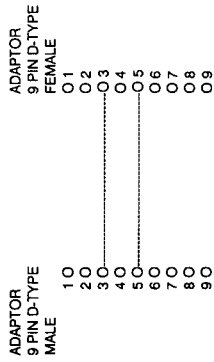
For 25-pin type COM ports use a standard 25-pin Female to 9-pin convertor cable or 25-pin to 9-pin convertor plug and a standard "Monitor extension" cable. For 9-pin type COM ports use a standard 9-pin to 9-pin "Monitor extension" cable. NOTE - the loose Female end of the supplied adaptor can be plugged directly into your PC

COMPUTER 25 PIN D-TYPE FEMALE	ADAPTOR 9 PIN D-TYPE MALE	COMPUTER 9 PIN D-TYPE FEMALE	ADAPTOR 9 PIN D-TYPE MALE
1 0	DCD	1 0	O 1
2 0	O 2 RXD	2 0	O 2 RXD
3 0	O 3 TXD	3 0	O 3 TXD
4 0	O 4 DTR	4 0	O 4
5 0	O 5 GND	5 0	O 5 GND
6 0	O 6 DSR	6 0	O 6
7 0	O 7 RTS	7 0	O 7
8 0	O 8 CTS	8 0	O 8
9 0	O 9	9 0	O 9

Minimum connections required for Cable 'A'

CABLE 'B' - INTERSIGN CONNECTION CABLE

Cable 'B' is a pin to pin 9-pin Male to 9-pin Female cable. You can use a standard 9-pin "Monitor extension" cable.



Minimum connections required for Cable 'B'

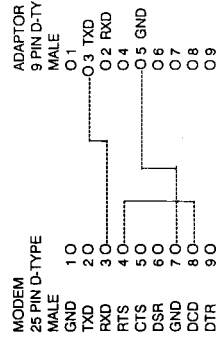
NOTE - intersign connection cable (Cable 'B') can be omitted and the male and female ends of consecutive adaptor cables then connected directly together if the distance is sufficient.

MODEM CABLES FOR CC784NET

COMPUTER TO MODEM CONNECTION CABLE

(Standard PC to Modem Connection - i.e. DTE to DCE)

MODEM TO CC784NET ADAPTOR CABLE



Minimum connections required

APPENDIX

APPENDIX A - NC900, NC9141, NC9191 ASCII CODES

Dec	Function	Dec	Char	Dec	Char	Dec	Char
0		32	Space	64	@		
1	Cursor <	33	!	65	A	96	
2	Stop	34	"	66	B	97	a
3	Clr All	35	#	67	C	98	b
4	Color	36	\$	68	D	99	c
5	Background	37	%	69	E	100	d
6	Shift	38	&	70	F	101	e
7	Set Password	39	'	71	G	102	f
8	Cursor >	40	(	72	H	103	g
9	Clear	41	)	73	I	104	h
10	Upper/Lower	42	*	74	J	105	i
11	Prog	43	+	75	K	106	j
12	Seq	44	,	76	L	107	k
13	Speed	45	-	77	M	108	l
14	Function	46	.	78	N	109	m
15	Set time	47	/	79	O	110	n
16	Run	48	0	80	P	111	o
17	Delete	49	1	81	Q	112	p
18	Draw	50	2	82	R	113	q
19	Remark	51	3	83	S	114	r
20	Wait	52	4	84	T	115	s
21	Reserve	53	5	85	U	116	t
22	Go to EOM	54	6	86	V	117	u
23	Set LLEN	55	7	87	W	118	v
24	Set address	56	8	88	X	119	w
25	Reserve	57	9	89	Y	120	x
26	Set Baud	58	:	90	Z	121	y
27	On/Off timer	59	;	91	[	122	z
28		60	<	92	/	123	{
29		61	=	93	]	124	|
30		62	>	94	^	125	}
31		63	?	95	~	126	~
						127	Del

NC900, NC9141, NC9191 ASCII CODES - continued

Dec	Function	Dec	Func	Dec	Func	Dec	Func
128	Sync.	160	Color P	192		224	Graph 0
129	Crawl Sync	161	Color K	193		225	Graph 1
130	Reserve	162	Color F	194		226	Graph 2
131	Reserve	163	Color A	195	Normal	227	Graph 3
132	Reserve	164	Color C	196	Big	228	Graph 4
133	Reserve	165	Color L	197	Thin	229	Graph 5
134	var. space	166	Color G	198	Bold	230	Graph 6
135		167	Color B	199	Rainbow	231	Graph 7
136		168	Color R	200	Italic	232	Graph 8
137		169	Color M	201	Tall	233	Graph 9
138		170	Color H	202		234	
139		171	Color C	203	Flash	235	
140		172	Color S	204	Reserve	236	
141		173	Color N	205		237	
142		174	Color I	206		238	
143		175	Color D	207		239	
144	Speed 0	176	Time	208	Bgrnd P	240	Reserve
145	Speed 1	177	Reserve	209	Bgrnd K	241	Reserve
146	Speed 2	178	Halt	210	Bgrnd F	242	Reserve
147	Speed 3	179	Date	211	Bgrnd A	243	Reserve
148	Speed 4	180	Reserve	212	Bgrnd Q	244	Reserve
149	Speed 5	181	Magic	213	Bgrnd L	245	Reserve
150	Speed 6	182	Beep	214	Bgrnd G	246	Reserve
151	Speed 7	183	Reserve	215	Bgrnd B	247	Reserve
152	Screen. Clr	184	Up	216	Bgrnd R	248	Reserve
153		185	Down	217	Bgrnd M	249	Reserve
154		186	Pause	218	Bgrnd H	250	Reserve
155		187	Right	219	Bgrnd C	251	
156		188	Left	220	Bgrnd S	252	
157		189	Reserve	221	Bgrnd N	253	
158		190	Reserve	222	Bgrnd I	254	
159		191	Hold	223	Bgrnd D	255	

APPENDIX B - CC784NET ASCII CODES

Dec	Function	Dec	Char	Dec	Char	Dec	Char
0		32	Space	64	@	96	
1	Stop	33	!	65	A	97	a
2	Speed	34	"	66	B	98	b
3		35	#	67	C	99	c
4	Sequence	36	\$	68	D	100	d
5		37	%	69	E	101	e
6	Pause	38	&	70	F	102	f
7	Beep	39	,	71	G	103	g
8	Cursor <	40	(	72	H	104	h
9	Prog	41	)	73	I	105	i
10	Cursor >	42	*	74	J	106	j
11	Move 8 <	43	+	75	K	107	k
12	Move 8 >	44	,	76	L	108	l
13	Run	45	-	77	M	109	m
14	Clear	46	.	78	N	110	n
15	Back Crawl	47	/	79	O	111	o
16	Big	48	0	80	P	112	p
17	Normal	49	1	81	Q	113	q
18	Bold	50	2	82	R	114	r
19	Italic	51	3	83	S	115	s
20	Flash	52	4	84	T	116	t
21	Fore Color	53	5	85	U	117	u
22	Back Color	54	6	86	V	118	v
23	Set Time	55	7	87	W	119	w
24	Crawl	56	8	88	X	120	x
25	Jump	57	9	89	Y	121	y
26	Wipe Up	58	:	90	Z	122	z
27	Wipe Down	59	;	91	[	123	{
28	Capitals	60	<	92	\	124	|
29	Shift	61	=	93	]	125	}
30	Graphic Sel	62	>	94	^	126	~
31	Magic	63	?	95	Time	127	Delete

ASCII values 128 to 255 are reserved and should not be used

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