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MODEL NC500 UNIVERSAL / P. C. PROGRAMMER INSTRUCTION MANUAL

INTRODUCTION

The Model NC500 Universal/P.C. Field Programmer is a compact, battery powered device which incorporates surface mount technology, a smartly styled plastic enclosure, 16 button keyboard, power switch, recharge jack, Power LED and Program Verify LED. Custom developed for programming of NorComm's E²Prom products, the NC500 provides two methods of programming: Menu driven software interface, and stand-alone field programming via the 16 button keyboard entry. The Model NC500 menu driven software allows: Direct retrieval, modification, archiving and writing of product configurations. When used with the P.C. software, the hand held unit acts as an interface between the NorComm product and the P.C.'s serial port.

P.C. COMPUTER INTERFACE AND SOFTWARE COMPONENTS:

The NC500 package comes complete with: DB9 pin plug and a 3ft. cable assembly for connection to a P.C. serial COM port, a 9 to 25 pin COM port adapter, an A.C. wall charger, and a software package that includes both a 5.25" and 3.5" disk. The software operates under MS-DOS (Version 3.01 or later) on any IBM-PC or compatible computer.

NC500 HAND HELD UNIT INITIALIZATION:

When first received, the battery in the NC500 will need to be charged. Do this by plugging the wall charger connector into the jack on the rear panel of the NC500 and then plugging the wall charger itself into the nearest 115VAC outlet. Charge the NC500 with the power OFF. A complete charge will be obtained in about 14 hours. As is typical of NiCad batteries, it is best to completely discharge the battery before fully charging. "Short Cycling" the battery will prematurely shorten battery life.

HARDWARE INSTALLATION. P.C. AND NC500 HAND-HELD UNIT:

To use the Model NC500 as a serial interface to a PC compatible computer, perform the following:

- A) Remove power (OFF) from both the P.C. and NC500 hand-held units.
- B) Plug the 9 pin D-SUB connector (with adapter, if needed for 25 pin port) into either the COM #1 or #2 serial port.
- C) Plug the product into the 14 pin connector of the programmer.
- D) Apply power to both the P.C. and the NC500 hand-held units.

SOFTWARE INSTALLATION:

The software may be installed onto a hard drive and/or a floppy. We strongly recommend NOT installing from A: drive to A:, as this will alter your source disk. We DO recommend installing onto a hard drive first and then copying files onto a blank floppy as described below.

NOTE: While the following instructions are for a source drive "A:" and a target drive "C:", these parameters may be changed during the installation process. Also, <ENTER> is read "Press the Enter Key", <ESC> is read "Press the Escape Key", etc.

A) Follow these steps to install software to a hard drive:

- 1) Insert the 3-1/2" (or 5-1/4") NorComm **source** disk into A: (or B:)
- 2) From DOS change to the drive with the NorComm **source** disk. Example changing from C drive: C:\A: <ENTER>
- 3) Type INSTALL <ENTER>
- 4) Follow the directions on the screen during the installation process to choose **path location** (default is C:\NORCOMM), **COM port** 1 or 2 and **screen color**.

NOTE: When using an LCD display it is recommended that the monitor be set to monochrome. Any of these configurations may be changed at a later time by choosing item #6 CONFIGURATION from the NC500 software menu.

- 5) After the program is loaded it will automatically start. Press <ESC> to exit. To re-start the menu program change directory to the C:\NORCOMM (Or whatever directory you specified during the installation or configuration process) and type:
C:\NORCOMM>MENU <ENTER>

B) To run from a floppy:

- 1) You must first load to a hard disk as described above in item (A)
- 2) Remove the NorComm NC500 software **source** disk from drive A:
- 3) Insert your target disk into A:

4) Copy the files from the C:\NORCOMM directory to the A: disk as follows:
C:\NORCOMM>COPY *.* A:\.* <ENTER>

5) You now run the NC500 software from the A: drive disk.

6) If you are running from a disk it is recommended that you verify the configuration settings to match your working environment.

ON SAVING THE CONFIGURATION FILES: When you save a configuration file (For example, the settings of an NC409) from the NC500 software you will create several files with the same **NAME** but different **EXTENSIONS**. These files are automatically saved to the working directory which contains the NC500 software. If these files are moved to another directory, they **MUST** be moved back when needed by the NC500 software. Here's an example of moving a file which was saved as PROGRAM3 to a sub-directory called C:\FILES:

C:\NORCOMM>COPY PROGRAM3.* C:\FILES\.* <ENTER>

This would copy all the files named PROGRAM3 to the C:\FILES sub-directory. The same holds true for deleting files. Just remember to handle the files by their **FILE NAME** and not by their **EXTENSION**.

PRODUCT PROGRAMMING USING THE NC500 P.C. SOFTWARE:

To program the NorComm's E²Prom designed products via the P.C. software perform the following:

A) Interface the NC500 hand-held unit as described in **HARDWARE INSTALLATION** above.

B) For all products follow the programming instructions as described in the product manual.

NOTE: If you are not sure of product software version, use menu item <?> key to identify the product in question. Once verified, choose the appropriate programming software from the menu.

USING THE NC500 HAND-HELD UNIT AS A STAND-ALONE PROGRAMMER:

To program the NorComm's E²Prom designed products using the NC500 hand-held unit in stand-alone mode, perform the following:

A) With **POWER "OFF"** (Red LED un-lit) on the NC500 hand-held unit plug the 14-pin connector into the device to be programmed.

B) Switch **POWER "ON"** (Red LED lit) on the NC500 hand-held unit.

C) For most products follow the programming instructions as described in the product manual. Exceptions to this procedure are described below.

PROGRAMMING THE MODEL NC409 DTMF ANI ENCODER:

Follow the programming instructions as described in the Model NC409 Instruction Manual for all functions except for the 15 memory locations the programming of which is discussed below.

NC500 Stand-Alone Programming of the NC409's 15 Memory Locations.

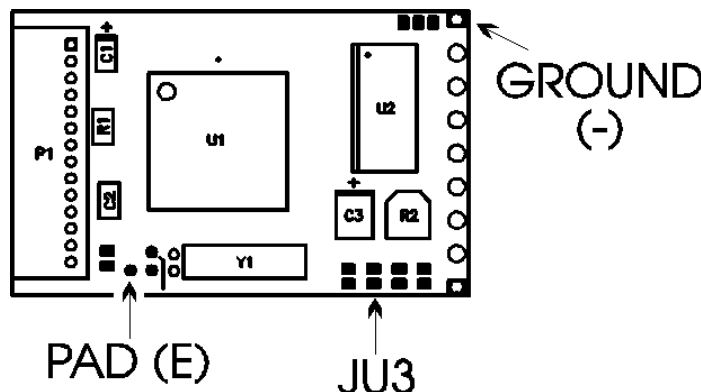
Perform the following steps to program the 15 memory locations:

A) With **POWER "OFF"** attach the NC409 to the 14 pin connector.

B) Verify that the JU3 jumper is installed.

C) Attach a small alligator clip lead or wire to the ground pad as shown below.

D) Switch **POWER "ON"**.



- E) **Opening memory access:** With the other end of the grounded clip lead, make steady contact with the **RESET PAD E** and expect to see the following:
- 6) Green **PROG VERIFY** LED will flash once quickly, pause a moment, then light steadily.
 - 2) Remove ground contact from the **RESET PAD E** and green **PROG VERIFY** LED will go out. The 15 memory locations are now programmable.
- F) Enter the desired memory code from the 16 button keypad. Refer to the Truth Table for BCD Input on page 4 of the NC409 users manual.

NOTES:

- 1) The "0" character is not a valid memory location.
- 2) The programming sequences have a 2 second interdigit timeout.

Examples:

- 1) To program the 1st memory location with "1234" enter 1 1234.
- 2) To program the 2nd memory location with "555" enter 2 555.
- 3) To program the "D" (i.e. 15th) memory location with "4231" enter d 4321.

- G) **Closing memory access:** With the other end of the grounded clip lead, make steady contact with the **RESET PAD E** and expect to see the following:
- A) Green **PROG VERIFY** LED will flash once quickly, pause then start to flash.
 - B) Remove ground contact from the **RESET PAD E** and the green **PROG VERIFY** LED will stop flashing.

H) Switch power off. Disconnect device. The new memory locations have been programmed.

TROUBLESHOOTING NOTE: If you do not see the correct green **PROG VERIFY** LED flash sequences then an error has occurred. In this case, cycle power and repeat procedure. Errors in this mode of programming are caused by making poor contact with the grounded clip lead and **RESET PAD E**.

MODELS NC400 AND NC401 DTMF DECODERS:

To use the Model NC500 with the NC400/NC401, please refer to the NC400/NC401 manuals. The only difference is that program audible tones generated by the NC400/NC401 is replaced by the green **PROG VERIFY** LED.