NORCOMM™
DATA SIGNALING PRODUCTS

5385 CARRIE DRIVE
GRASS VALLEY, CA 95949
PHONE: (530) 477-8400
TECH. LINE: (530) 477-8402
FAX: (530) 477-8403
SALES: (800) 874-8663
web:www.norcommcorp.com

MODEL NC800 OTAP/PROGRAM ADAPTER

INSTRUCTION MANUAL

The Model NC800 is a self contained P.C. Adapter used to program the Model NC804/806 series voice encryption scramblers. The NC800 interfaces via a USB connector to a P.C. Computer running NorComm's "SYSTEM MANAGER" software. NorComm's "SYSTEM MANAGER" software is Windows® based to operate in Windows® 95, 98, XP or NT environments. The NC800 is designed to be configured as a local (bench) programmer or as an over the air programmer (OTAP) via a host transceiver or base station to reprogram key codes or enable "KILL" mode in the event of a lost or stolen radio.

SPECIFICATIONS

P.C. SOFTWARE ..... Windows® 95, 98, XP or NT Edition

FORMAT ..... USB

INTERFACING ..... [1] 6 foot USB cable
..... [2] 3 foot host transceiver cable assembly.
..... [3] 6 inch module cable assembly.

KEY CODES ..... 6 Digit address (over 20 Trillion code combinations). Six (6) Digit Coded Key Address can be made up from any of the printable characters on the P.C. keyboard. Note: Lower case alpha keys are automatically default to upper case characters.

OPERATION VOLTAGE ..... Provided via computer USB powered port.

OPERATING TEMPERATURE ..... 0° to 70°C.

FOR TECHNICAL SUPPORT
CALL 530-477-8402

SYSTEM MANAGER SOFTWARE INSTALLATION

Used in conjunction with the Model NC800 programmer, the NC800 System Manager software provides an easy to use computer interface for local as well as over the air programming of NC804 and NC806 scrambler products.

STEP 1 ..... Insert NC800 System Manager Software into CD drive.

STEP 2 [USB DRIVER] ..... Open CD and double click on the NC800 USB Driver. Note: This is a self installing driver.

STEP 3 [NC800 PROGRAMMER] ..... Once the USB driver has been installed, drag the System Manager Software (NC800USB.exe) from the CD to the desk top to install.

STEP 4 [CONNECT TO PC] ..... Connect the NC800 programmer via the provided USB cable to your computer.

STEP 5 [RUNNING SOFTWARE] ..... Once the software has been installed and the NC800 programmer has been connected double click the System Manager file that you placed on the desk top. The program will open and it is ready for use.

LOCAL BENCH INTERFACING

The Model NC800 hardware provides both local (bench) and over the air programming (OTAP) setup configurations.

STEP 1 [LOCAL BENCH SETUP] ..... Refer to Software Installation for the correct procedures for connecting the NC800 programmer to your computer.

STEP 2 [LOCAL BENCH SETUP] ..... Connect 6 inch module cable assembly to plug P1 on the NC800 programmer. This cable assembly can be plugged in either direction between Plug P1 on NC800 programmer board and NC804/806 module. Refer to Figure 1, page 4 for setup configuration.
NOTE: When module is connected to NC800, "MODULE LED" will illuminate indicating that both NC800 programmer and module are active and ready for programming sequence.

LOCAL PROGRAMMING WITH SYSTEM MANAGER

STEP 1 [LOCAL PROGRAMMING]..... Plug NC804/806 scrambler to be programmed into 6" cable connected to NC800 programmer.

STEP 2 [LOCAL PROGRAMMING]..... Using the System Manager Software, click on the Options button in the upper left corner. Select Comport, and then select USB Serial Port (the number displayed following USB Serial Port is the port where the NC800 has been plugged into). Note: This step will need to be repeated every time you start the NC800 System Manager.

STEP 3 [LOCAL PROGRAMMING]..... In the System Manager main window click READ. This causes the NC800 programmer to acknowledge that a NC804/806 scrambler is plugged in, MODULE FOUND will be displayed in the status window.

STEP 4 [LOCAL PROGRAMMING]..... Press DEFAULT. This will insert default information into all fields and clear any errors.

STEP 5 [LOCAL PROGRAMMING]..... Edit module ID. Each NC804/806 scrambler requires an individual module ID, though it is possible to give every scrambler the same ID it is not recommended. Example: If you wanted to disable a specific unit you would end up disabling the entire fleet.

STEP 6 [LOCAL PROGRAMMING]..... Edit delay times and selectable features. These are radio specific items that cannot be changed via over the air programming. Be sure they are set correctly before installing the NC804/806 scrambler into the radio.

STEP 7 [LOCAL PROGRAMMING]..... Edit key codes as desired. Note: Do not delete key codes that are unused, leave them as defaults to ensure proper programming of the NC804/806.

STEP 8 {LOCAL PROGRAMMING]..... Verify that all entries are correct. Click PROGRAM. When programming is complete MODULE PROGRAMMED will be displayed in the status window. Note: Use attached Programming worksheet to keep a record of your Key Code information. The System Manager will not read this information from the module and will not print this data.

STEP 9 [LOCAL PROGRAMMING]..... To program another module with the same information, as might be needed in a fleet, change the Module ID and click PROGRAM.

OVER THE AIR PROGRAMMING (OTAP) INTERFACING

STEP 1 [OTAP SETUP] ..... Refer to Software Installation for the correct procedures for connecting the NC800 programmer to your computer.

STEP 2 [OTAP SETUP] ..... Connect 3 foot cable assembly to plug P1 on NC800 programmer board and flying leaded end of cable assembly to host transceiver unit as noted in the following steps. NOTE: When module is connected to NC800, “OTAP LED” is illuminated.

STEP 3 [OTAP SETUP] ..... Connect **BLACK** lead [-supply] to TX and RX system ground.

STEP 4 [OTAP SETUP] ..... Connect **BLUE** lead [RX audio input] to host transceiver or base station discriminator output circuitry.

STEP 5 [OTAP SETUP] ..... Connect **WHITE/BLACK** lead [mic audio output] to host transceiver or base station microphone input circuitry.

STEP 6 [OTAP SETUP] ..... Connect **WHITE/ORANGE** lead to transmitter PTT circuitry that requires a **LOW** [to ground] to active.

OVER THE AIR PROGRAMMING WITH SYSTEM MANAGER

STEP 1 [OTAP PROGRAMMING]..... Plug 3’ cable connected to transceiver into plug P1 on the NC800 programmer.

STEP 2 [OTAP PROGRAMMING]..... Using the System Manager Software, click on the Options button in the upper left corner. Select OTAP. NOTE: If you do not see OTAP on the menu, you are currently in OTAP Mode.

STEP 3 [OTAP PROGRAMMING]..... Enter the Module ID of the selected remote unit. NOTE: You can only change key codes, enable or disable a remote module. All other programming must be done locally.

STEP 4 [OTAP DISABLE] ..... To disable (KILL) a remote unit press the DISABLE button. Confirmation will be displayed in the status window only if echo PTT is enabled and the remote radio is on.

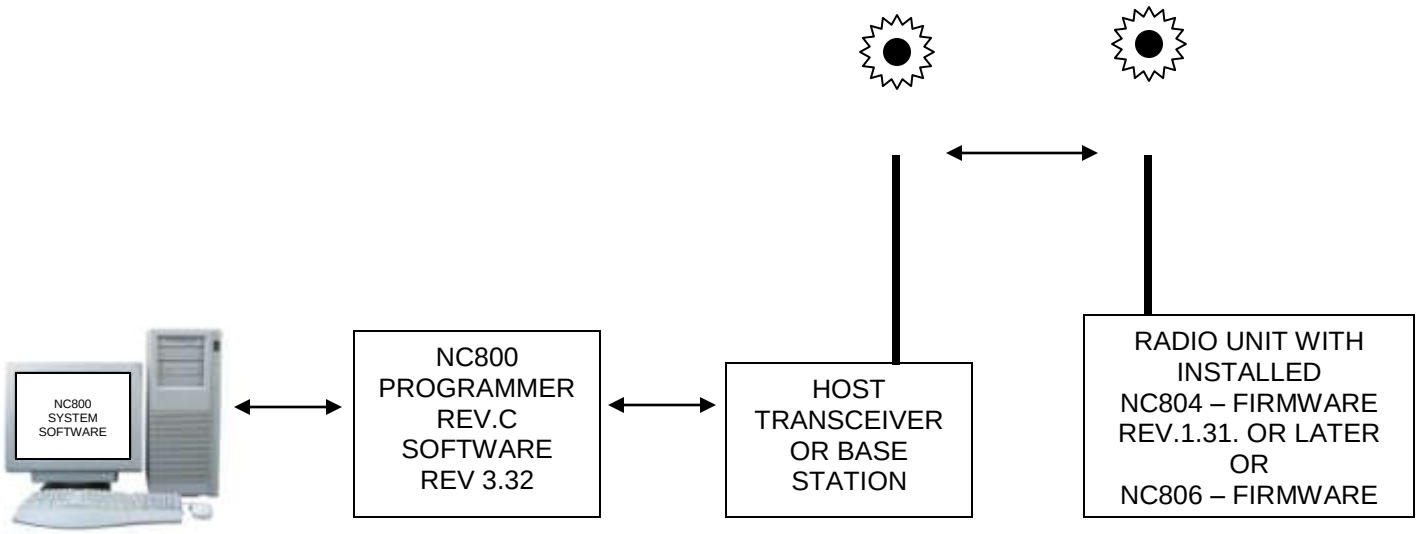
STEP 5 [OTAP ENABLE] ..... To Enable a disabled remote unit press the ENABLE button. Confirmation will be displayed in the status window only if echo PTT is enabled and the remote radio is on.

STEP 6 [OTAP KEYCODE CHANGE] .. To program KEY CODES in a remote unit enter the desired key code changes and press PROGRAM. Confirmation of these changes will be shown by the key code numbers displayed changing from RED to BLACK. Note if a key code does not change the programmer will try the next key code until all changes have been attempted. “PROGRAMMING ERRORS OCCURRED” will be displayed in the status window if any errors occurred while programming. See hyper help for more information on programming problems. If errors occurred press PROGRAM again to retry programming.

OVER THE AIR PROGRAMMING (OTAP) SEQUENCE

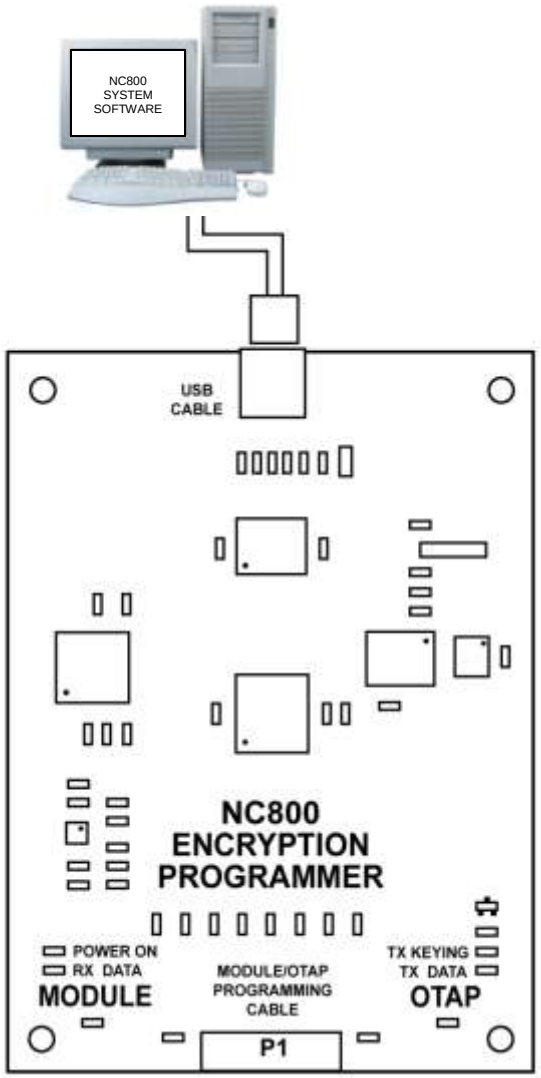
PROGRAMMING SEQUENCES:

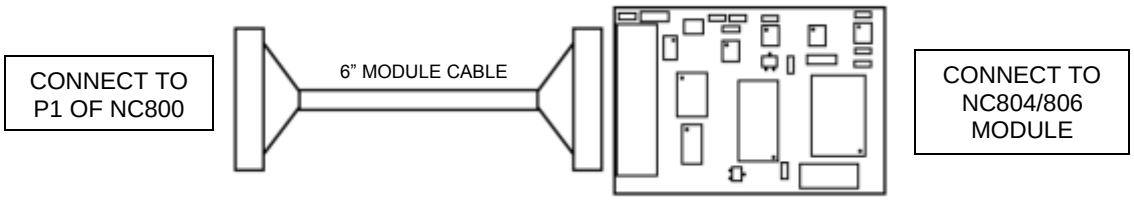
1. Base system sends command code(s) via NC800 adapter to remote radio unit.
2. Base system activates transceiver, PTT circuitry waits 350mS, then sends module I.D. and command code data sequence.
3. Remote radio unit receives command code data and up-dates NC804/806 modules EEPROM.
4. Remote radio units NC804/806 module verifies EEPROM commands then activates transceiver PTT, circuitry waits 350mS, and sends confirmation.
5. Remote radio must be set up for echo PTT and have white/orange wire [TX Keying] installed.
6. Base system receives remote radio’s command acknowledgment and sends confirmation to P.C. via NC800 adapter.

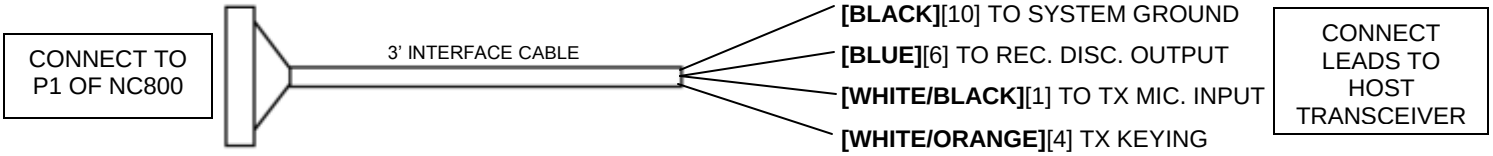


MODEL NC800 OTAP OR MODULE CONFIGURATION

FIGURE 1







NC804/806 PROGRAMMING WORKSHEET

The NC804/806 Programming Worksheet is provided to assist you in programming these scramblers and give you a permanent record for future reference. Fill in the appropriate boxes with desired key codes, delays, features and Module ID.

Information on this form is user proprietary, and as such it CANNOT be saved, printed or retrieved for future viewing from the NC800 System Manager.

PROPRIETARY INFORMATION

It is strongly recommended for security reasons that this form be given to the end user and/or placed in a secured location (ie: SAFE) for future reference.

Begin programming the NC804/806 by following the programming instructions in the NC800 Instruction Manual and referring to the programming software. Key codes can be any of the printable keyboard characters. ***Note:*** *Alpha keys default to upper case characters.*

NOTE: Over The Air Programming feature requires a different 6 digit Module ID for each NC804/806 installed (ie: Badge Number, Car Number, or a Name).

CUSTOMER _____ CONTACT PHONE _____

DATE _____ EQUIPMENT TYPE _____

EQUIP. MAKE/MODEL _____ SERIAL NO. _____

NOTES:

MODULE ID [6 DIGITS] ***NOTE: Individual 6 digit user ID must be entered for OTAP to function properly***

FRONT PORCH DELAY (Ms)	Always Scramble	Receiver Amp	LED Sink/Source	Start to Speak Beep	Default to Scramble	Double Tap Mode	Inversion Mode (NC806 ONLY)	USER KEY/INVERSION CODES (Alpha keys default to upper case characters) ***6 DIGITS REQUIRED***	
								KEY/INVERSION CODE #1	6 DIGITS
								KEY/INVERSION CODE #2	6 DIGITS
								KEY/INVERSION CODE #3	6 DIGITS
								KEY/INVERSION CODE #4	6 DIGITS
								KEY/INVERSION CODE #5	6 DIGITS
								KEY/INVERSION CODE #6	6 DIGITS
								KEY/INVERSION CODE #7	6 DIGITS
								KEY/INVERSION CODE #8	6 DIGITS

WARRANTY POLICY

NorComm products are unconditionally guaranteed for two (2) years on materials and labor from date of purchase.

All Warranty repairs must be performed at NorComm's Customer Service Department in Grass Valley, CA. Units under warranty can be returned for repair or replacement without prior authorization, however, a letter explaining the defect should be enclosed with the unit. Out of warranty units returned constitute Purchaser's authorization for NorComm to repair or replace equipment and to invoice Purchaser for any and all reasonable costs of repair labor, parts and freight.

NorComm shall not be obligated to repair or replace equipment rendered defective, in whole or in part, by causes external to the equipment, such as, but not limited to, catastrophe, power failure, or transients, environmental extremes, improper use, and maintenance or interfacing applications. NorComm further assumes no liability for any incidental or consequential damages which may result from the applications of its products by the Purchaser or any other party.