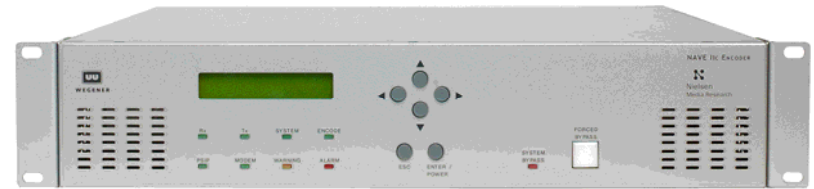




NAVE IIc



Nielsen Audio Video Encoder Compressed



Quick Start Guide

Welcome to your **NAVE IIc Nielsen Compressed Audio Video Encoder**! The **WEGENER NAVE IIc** Nielsen Encoder expands upon Nielsen's audio coding capabilities by supporting the ability to code a pre-compressed MPEG-2 transport stream. The **WEGENER NAVE IIc** Encoder will insert Nielsen data into MPEG-2 Multi-Program Transport Streams compliant with the US ATSC standards. This **Quick Start Guide** will help you quickly set up and start operating your **NAVE IIc** using the **Web Interface**. For a full description of the **NAVE IIc**'s abilities and detailed installation and operation instructions, please consult the **NAVE IIc User's Manual** available on CD or on the World Wide Web at www.wegener.com.

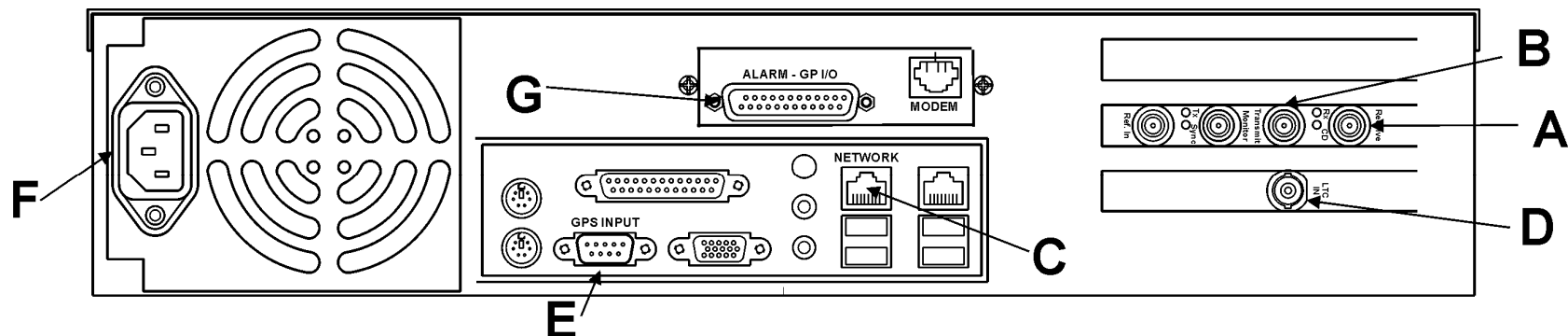
For additional help, contact us by phone at (770) 814-4057, by fax at (678) 624-0294, or by email at service@wegener.com.

For questions about SID support, please contact the Nielsen Encoder Support Group by phone at (800) 537-4872, or by email at amol@nielsen.com.

1. **Remove the NAVE IIc**, AC power cord, and CD ROM (Manual) from the shipping carton. Call your shipping carrier immediately if any damage is discovered.
2. **Remove the clear plastic covering** from around the bottom of the unit and over the LCD window on the front panel.

3. **Place the NAVE IIc** indoors on a well-supported, flat table or desktop or mount it in a standard equipment rack. If rack-mounting your **NAVE IIc**, please consult the **NAVE IIc User's Manual** for detailed instructions and specific cautions.
4. **Connect the following items:** (Refer to **Figure 1**.)
 - a. The output from your DTV Encoder or Stream Splicer to the Receive input female BNC connector (A).
 - b. The output from the **NAVE IIc**, Transmit out female BNC connector (B), to your DTV transmitter or modulator.
 - c. Your LAN line to the **NAVE IIc**'s Network port (C), 10/100/1000baseT; female RJ-45 connector. See Step 8 for Network port configuration.
 - d. Your time reference source, of your choice, to one of the following ports: NTP (C), SMPTE LTC (D) or GPS (E).
 - e. Connect the AC power cord to the **NAVE IIc**'s IEC receptacle (F) and to a 100-to-120-Vac or 200-to-240-Vac source. **We strongly recommend that you connect the NAVE IIc unit to an un-interruptible power source.**

Figure 1: NAVE IIc Rear-Panel Connectors



- f. The **Alarm** port (G, **Figure 1**) on the rear panel may be used to provide a contact closure during alarm conditions or power failure. See the **NAVE IIC User's Manual** for complete connector and signal details.

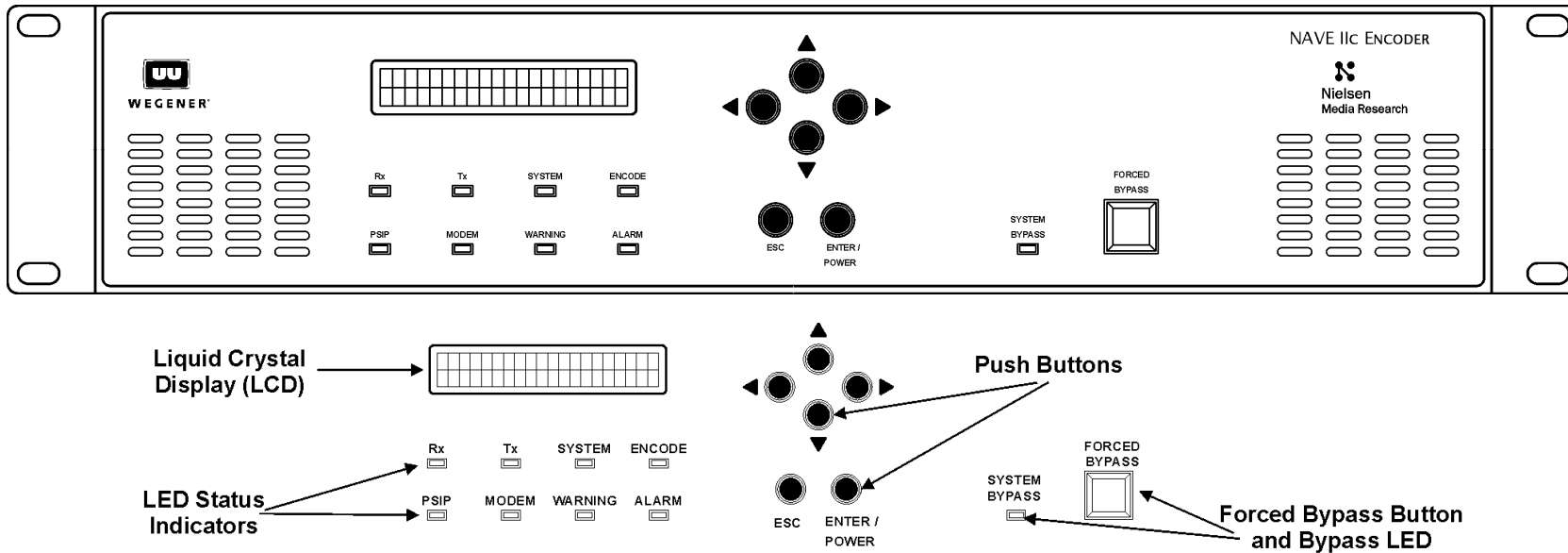
CAUTION: Do not connect devices to the mouse, keyboard, or other connectors *not* described here. They are for factory use only.

- 5. Next, start the NAVE IIC as follows:
 - a. Press and hold the **ENTER/POWER** button on the front panel for two seconds. The NAVE IIC will power up and begin the boot process.

Six of the nine LED indicators flash on and off as the unit begins initialization; **Tx**, **Rx** and **System Bypass** will not flash. The boot process will take approximately **50 seconds** to complete.

Note: To easily restart the **NAVE IIC** any time after a normal power down, simply press the **ENTER/POWER** button on the **NAVE IIC's** front panel. (Refer to the **User's Manual** for details.) If power is lost to the **NAVE IIC** because of an interruption of service, the **NAVE IIC** will automatically power itself back on.

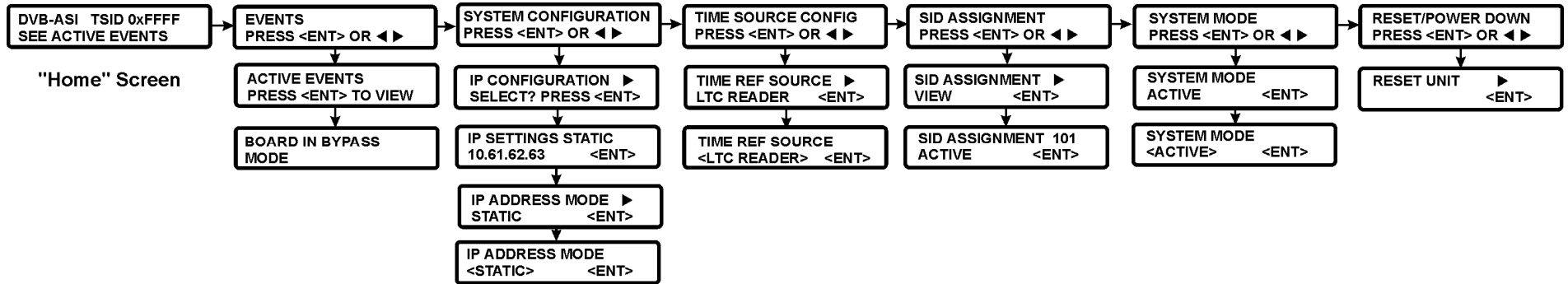
Figure 2: NAVE IIC Front-Panel Controls and Indicators



- 6. Get to know the NAVE IIC's front panel.
 - a. The **Liquid Crystal Display (LCD)** provides **menu**, **data**, and **input screens** to the user. **Menu screens** are entry points to additional screens. These may be **data screens** that display signal or unit status information, or **input screens** where settings can be changed by the user.
 - b. The **NAVE IIC's "Home" screen** displays the unit's input/output stream type (**ASI** or **SMPTE310M**), the **TSID** number (in hex) as read from the input source, and a scrolling line that displays the current SID configuration(s) (once the unit is configured). This **"Home"** screen may be reached at any time by repeatedly pressing the **ESC** button.

- 7. Menu Navigation
 - a. Six pushbuttons allow you to move through the various screens, select characters for input, and accept or reject changes. To move down or up through the menu screens, use the **ENTER/ POWER** and **ESC** buttons.
 - b. To enter or change data in editable fields (indicated by <>), press the **ENTER/ POWER** button and use the up Δ and down ∇ arrow buttons to increment the underlined character or digit. Use the right \triangleright and left \triangleleft arrow buttons to move to adjacent digits and press **ENTER/POWER** again to accept your input. Pressing **ESC** will cancel any pending changes.
 - c. **Figure 3** is a summary of the top-level menus available through the **Front Panel Interface** of the **Encoder**. See the **NAVE IIC User's Manual** for complete Front Panel menu description and operation.

Figure 3: LCD Front Panel Menu Summary



d. Ten Front Panel light-emitting diodes (LEDs) illuminate to show unit status at a glance. Table 1 gives the meaning of each LED indicator. Please refer to Table 2 for the meaning of the rear panel Transport I/O card LED indicators.

Table 1. Front Panel LED Indicator Descriptions

LED Label	LED Color	LED STATE	Meaning
Rx	Green	Constant	The receiver is enabled and the unit is receiving a valid transport stream.
		Off	Valid data has not been received for 0.1 seconds.
Tx	Green	Constant	The transmitter is enabled and data is being transmitted.
		Off	Valid data has not been sent for 0.1 seconds.
System	Green	Constant	The watermarking process has started, and no alarms are present.
		Off	The NAVE IIc Watermark function is shut down, but the Encoder is monitoring the stream.
Encode	Green	Constant	The NAVE IIc has inserted at least one SID in the last second or two.
		Off	The NAVE IIc is not watermarking the AC3 audio frames.
PSIP	Green	Constant	The NAVE IIc is receiving PSIP packets, and the program information in the PSIP packet matches the PMT and PAT.
		Off	No PSIP information can be found in the stream, or the PSIP information is incorrect.
Modem	Green	Constant	The modem is on and in use.
		Off	No modem activity is detected.
Warning	Yellow	Constant	A potentially serious error has occurred. . See Event Log for details.
		Off	No current Warning condition exists.

Table 1. Front Panel LED Indicator Descriptions (Continued)

LED Label	LED Color	LED STATE	Meaning
Alarm	Red	Constant	An error has occurred. See Event Log for details.
		Off	No current Alarm condition exists.
System Bypass	Red	Constant	The transport stream is not being processed due to lack of signal, front panel or user bypass, or critical error.
		Off	The NAVE IIc is processing the transport stream.
Forced Bypass (Switch CAP)	Red	Constant	The NAVE IIc is in Hardware Bypass Mode; the Forced Bypass button is engaged. In this position all transport stream processing and monitoring stops, until the switch is disengaged.
		Off	The Forced Bypass switch is not engaged.

Table 2 Rear Panel Transport I/O Card LED Indicator Descriptions

LED Label	LED Color	LED State	Meaning
Rx	Red	Flashes	The receiver is enabled and the unit is receiving a valid transport stream.
		Off	Valid data has not been received for 0.1 seconds.
CD	Red	Off	No Carrier is detected on the Receive input.
		Constant	A carrier is detected on the receive BNC input.
Tx	Green	Flashes	The transmitter is enabled and data is being transmitted.
		Off	Valid data has not been sent for 0.1 seconds.
SYNC	Green	Off	Synchronization can not be detected on Receive BNC input.
		Constant	The received input stream is packet synchronized.

e. The **Web Interface** for the NAVE IIc enables you to control and view the state of the **Encoder** remotely via a Web browser on a PC. It mirrors the functionality of the **Encoder's** front panel interface.

NOTE: The NAVE IIc must be configured with an **IP address** before the **Web Interface** can be used. See below for information on configuring the NAVE IIc's IP address, or see **Appendix A** for configuring the PC network settings to work with the default NAVE IIc settings.

8. IP Configuration Setup for Web Browser Control

The **default** setting for the NAVE IIc's **Network** port is **Static Mode**, with an **IP address** of **10.61.62.63** and a **Subnet mask** of **255.255.255.0**.

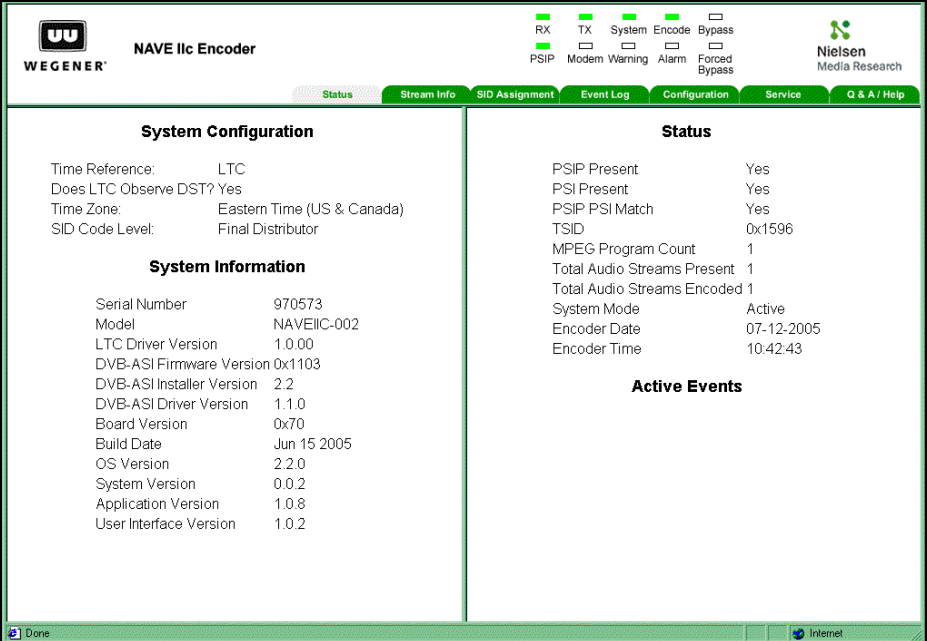
NOTE: Consult your Network Administrator to determine whether these defaults can be used on the network where you will install the NAVE IIc. You may need to configure it for **DHCP Mode**, to use a different **Static IP address**, or to change the **Subnet Mask** or **Gateway Addresses** (as described in the following steps).

- From the **Home** screen on the Front Panel LCD screen, press the right arrow \triangleright button until the LCD shows **SYSTEM CONFIGURATION**.
- Press the **ENTER/ POWER** button to set the System Configuration. (Using the \triangleleft and \triangleright arrow buttons will move you to the other top-level menu screens.)
- When the LCD screen shows **IP CONFIGURATION SELECT?** press **ENTER/ POWER** again.
- The next LCD screen displays **IP SETTINGS STATIC** on the top line, while the second line scrolls through the default IP configuration settings. Pressing **ENTER/ POWER** at any time on this screen will drop you down into the **IP Setup** menus.
- The first **IP Setup** screen is **IP ADDRESS MODE**. Pressing the **ENTER/ POWER** button here allows you to select either **STATIC** or the **DHCP** IP Address Mode.
- If you select **DHCP**, the NAVE IIc will request an IP address from your DHCP server. The LCD screen will display the message, **APPLYING IP SETTINGS PLEASE WAIT...**, and then display the new DHCP-assigned IP address.
- If you need a **Static** IP address, but a different **IP address** or **Subnet Mask** than the default settings, then use \triangleright to move one screen to the right until you see the screen with **IP ADDRESS** with the default address below it.

- NOTE:** For IP addresses that include subfields with leading zeros, you must enter those zeros when entering the address in the NAVE IIc. For example, **IP address 128.92.56.4** would be entered as **128.092.056.004**.
- Press **ENTER/ POWER** to edit the default address. (See **Menu Navigation on Page 2** to change editable data.) After entering the new IP address, press the **ENTER/POWER** button.
 - The LCD screen will display the message, **APPLYING IP SETTINGS PLEASE WAIT..**, and then display the **SUBNET ADDRESS** screen with the default mask address.
 - Press **ENTER/ POWER** to modify the **Subnet address** (if needed), and then the Gateway address (if needed).

- Record the new **IP Address** of the NAVE IIc unit displayed on the LCD screen.
- Using a computer on the network attached to the NAVE IIc, open your Web browser.
- Type the **IP Address** noted from the **IP Address** screen in the browser's address box. Leading zeros must be omitted when entering an IP address in a Web browser.
- Press **<Enter>** (on the computer keyboard) and the NAVE IIc's **Status Tab** will be displayed (**Figure 4**).

Figure 4: NAVE IIc Web Interface Status Tab



The screenshot shows the NAVE IIc Encoder web interface. At the top, there are status indicators for RX, TX, System, Encode, Bypass, PSIP, Modem, Warning, Alarm, and Forced Bypass. The Nielsen Media Research logo is also present. The main content area is divided into two columns: System Configuration and Status. The System Configuration section includes Time Reference (LTC), Does LTC Observe DST? (Yes), Time Zone (Eastern Time (US & Canada)), and SID Code Level (Final Distributor). The System Information section lists various version numbers and dates. The Status section shows PSIP Present (Yes), PSI Present (Yes), PSIP PSI Match (Yes), TSID (0x1596), MPEG Program Count (1), Total Audio Streams Present (1), Total Audio Streams Encoded (1), System Mode (Active), Encoder Date (07-12-2005), and Encoder Time (10:42:43). There is also an Active Events section which is currently empty.

- To see detailed information about the transport stream, click the **Stream Info Tab** (**Figure 5** on the next page). Information from this tab is required to configure the **SID Assignment Tab**.

NOTE: When the Front Panel **Forced Bypass** Switch is illuminated, no stream information will be displayed on the **Stream Info Tab**.

9. Assigning Nielsen Source IDs (SIDs)

Each SID must be assigned to a **Major/Minor Channel Number**, a **Program Number**, or to an **Audio PID Number**. Click the **SID Assignment Tab** to begin (see **Figure 6** on the next page).

Figure 5: NAVE IIC Web Interface Stream Info Tab

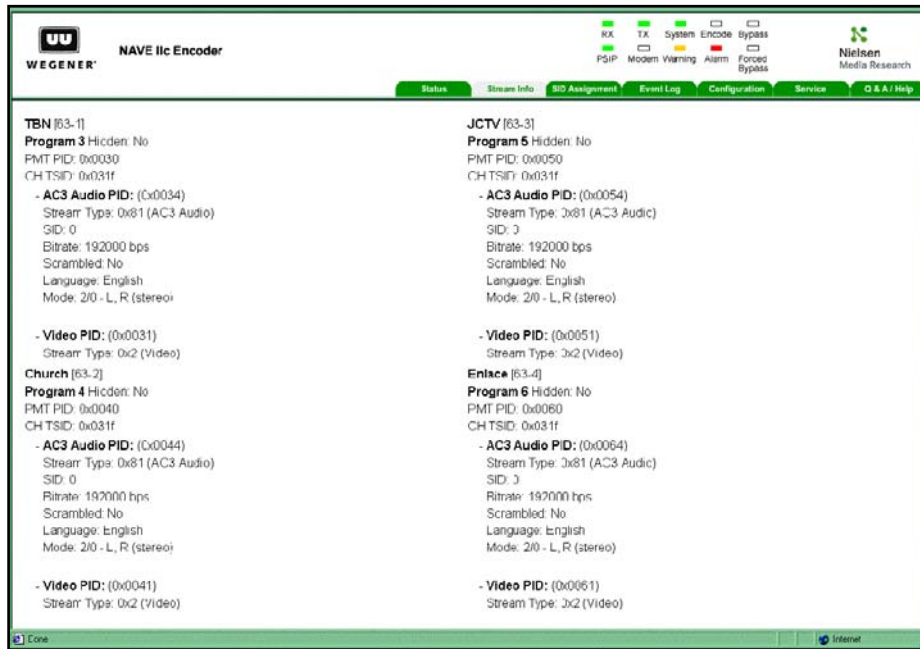
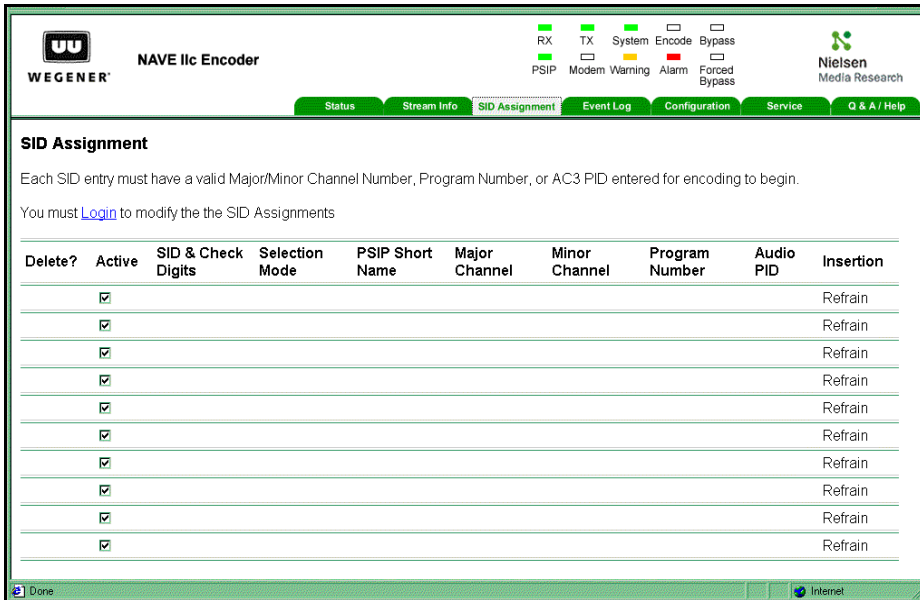
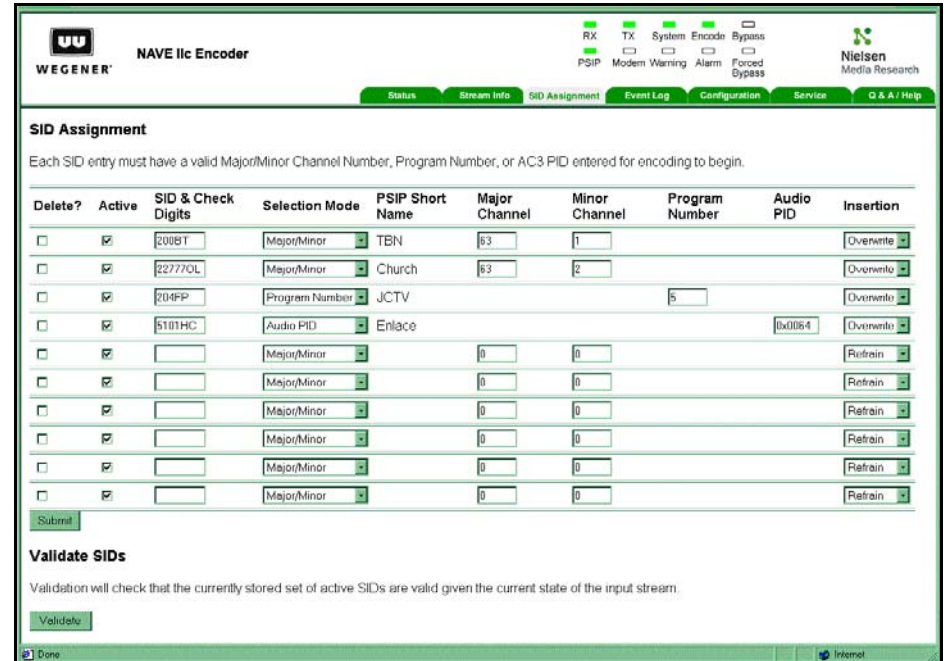


Figure 6: NAVE IIC Web Interface SID Assignment Tab



NOTE: You must login to add the SID and Assignment choices. (See 10. Password-Protected Web Pages for default Login User Names and Passwords.)

Figure 7: NAVE IIC SID Assignment Tab During Editing



- Once you have logged in, first enter the SID and Check Digits assigned to you by the Nielsen Encoder Support Group. The Check Digits will be two letters following the SID Number. The Check Digits must be entered as *capital letters*. If your transmission has more than one program in it, you must assign the correct SID for the correct program content.

NOTE: The Nielsen Encoder Support Group will supply this information to you.

- Next, select how you want to assign the SID: you can choose **Major/Minor**, **Program Number**, or **Audio PID** from a drop-down selection box.
- Depending on the **Selection Mode** chosen in **Step c**, the appropriate type of information box will display for you to enter the stream ID data.
- Next, select the type of **Insertion**: **Overwrite** or **Refrain** (from overwriting an existing SID) in the stream. (The **Nielsen Encoder Support Group** can instruct you about the **Insertion** settings.) The preferred mode is **Overwrite**.
- Repeat **Steps b - d** for each program in the stream.

- f. Click the **Submit** button on the left side of the page below the **SID Assignment** rows to enter the data. When the information has been accepted and matches the contents of the input stream, the **PSIP Short Name** for each program will be displayed after the **Selection Mode** box.
- g. You can also click the **Validate** button in the bottom left corner of the page. Validation will check that information entered in the **Selection Mode** data fields are valid, given the current state of the input stream (that is, the **Major** and **Minor Channel Numbers** entered into the **NAVE IIc** are valid for the input stream). The **NAVE IIc** will respond by displaying valid SID number(s) at the top of the Web page, followed by the message “**Valid**”. If the information is *not* valid, the message will say “**Stream Does Not Exist**”.

10. Password-Protected Web Pages

The **SID Assignment**, **Configuration**, and **Service Tabs** of the **NAVE IIc**'s Web interface are password-protected. To make configuration changes via the Web interface, users must be logged into the **NAVE IIc** with the appropriate **User Names** and **Passwords**. The default **User Name** and **Password** for each of these pages are given in **Table 3**:

For security reasons, all default passwords should be changed as soon as the unit's initial configuration is completed. This can be done on the **Service Tab**.

Table 3. NAVE IIc Configuration Tab User Names and Passwords

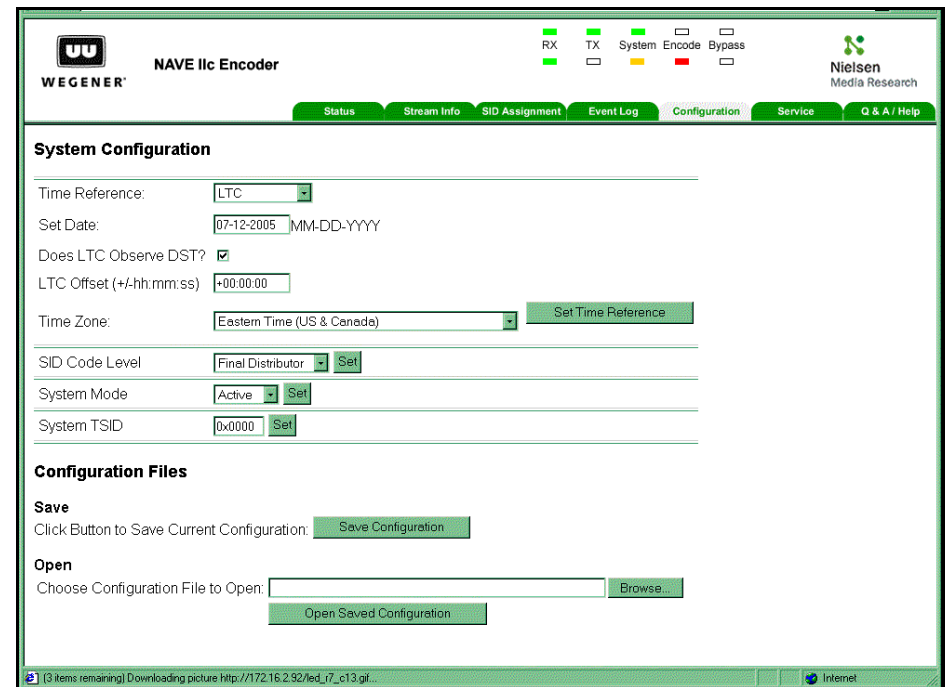
Tab Name	User Name	Password
SID Assignment	config	config
Configuration	config	config
Service	service	service

The **Service User Name** and **Password** provide access to all password-protected pages. Users with **config** privileges have access to the **SID Assignment** and **Configuration Tabs**, which handle the normal unit and data-stream-configuration processes.

11. Completing the NAVE IIc Encoder Configuration

- a. Click on the **Configuration Tab** to change the system configuration(**Figure 8**).
- b. Select a time reference source for the **NAVE IIc** on the **Configuration Tab**. By default, the **NAVE IIc** is set to an internal **System Clock** time source. WEGENER recommends that you select a stable external time source. The **NAVE IIc** supports three external sources: **NTP**, **LTC**, or **GPS**. Please refer to the **NAVE IIc User's Manual** for more information on these.

Figure 8: NAVE IIc Web Interface Configuration Tab



- c. Next, select the **SID Code Level** that fits your transmission. **Final Distributor** is the default and should be selected for ATSC broadcasts. **Program Content** should be selected if the transmission content is distributed to others.

This completes the setup for the **NAVE IIc**. You should not see any **Alarms** or **Warnings** or at this time. If the **Status Tab** and Front Panel LEDs do show an alarm, please investigate the problem by reviewing the **Event Log Tab** in the Web Interface or the **Active Events** screen on the Front Panel LCD menu.

CONTACT NIELSEN AFTER INSTALLATION

Upon completion of the NAVE IIc installation, you are required to contact the Nielsen Encoder Support Group at 800-537-4872 for data verification from the NG MMS reference site.

12. Environmental Operating Conditions and Physical Specifications

Table 4. NAVE IIc Environmental Limits and Physical Specifications

Characteristic	Specification
Use	Indoor
Altitude	Up to 2000 meters
Temperature Range	+10° C to +40° C
Relative Humidity (max.)	80% for temperatures up to 31° C decreasing linearly to 50% relative humidity at 40° C.
Weight	24 pounds or 10.91kilograms
Dimensions (H x W x D)	3.5" x 19" x 20" or 88.9 mm x 483 mm x 508 mm
Input Power Rating	100-220Vac, 135 Watts, 50/60 Hz

13. NAVE IIc Interconnect Descriptions and Pin-Out Specifications

Table 5. NAVE IIc Interconnect Descriptions

Connector Label	Connector Type	Pin No.	Signal Description
115/230 VAC	Std. IEC Receptacle		AC line in
ALARM – GP I/O Note: GPI and User Relay Inputs not available in Initial Release.	25-pin D female jack	1 2 3 4 5 6 7 8 9 10 11 12 13 14-25	General purpose input # 1 General purpose input # 2 General purpose input # 3 General purpose input # 4 General purpose input # 5 General purpose input # 6 User Relay N.C. contact User Relay COM contact User Relay N.O. contact GND Alarm N.O. contact (OK - COM closes here when unit OK) Alarm COM contact Alarm N.C. contact (Alarm –COM closes here on alarm or if power is off) GND

Table 5. NAVE IIc Interconnect Descriptions (Continued)

Connector Label	Connector Type	Pin No.	Signal Description
GPS In (RS-232 Levels)	9-pin D Male Plug	1 2 3 4 5 6 7 8 9	DCD RXD TXD DTR GND DSR RTS CTS RI
Ethernet (Network, left connector), 10/100/1000 Base-T	RJ45	1 2 3 4 5 6 7 8	TXDO+ TXDO- RXDI+ N/C N/C RXDI- N/C N/C
Modem	RJ11	1 2 3 4	Tip 2 (N.C.) Ring 1 Tip 1 Ring 2 (N.C.)
Receive (Rx, middle slot)	BNC Jack		SMPT310 for Model # NAVEIIC-001 DVB-ASI for Model # NAVEIIC-002 19.393Mbps Transport Input Stream
Transmit (Tx, middle slot)	BNC Jack		SMPT310 for Model # NAVEIIC-001 DVB-ASI for Model # NAVEIIC-002 Nielsen-Encoded 19.393-Mbps Transport Output Stream
Monitor (Middle slot)	BNC Jack		Buffered Output of the Transmit port NOTE: This port is not active when the NAVE IIc is in Forced Bypass mode.
LTC In (bottom slot)	BNC Jack		SMPTC LTC Time Reference, Unbalanced Input

Appendix A. CONFIGURING PC NETWORK TCP/IP SETTINGS TO WORK WITH NAVE IIC DEFAULT SETTINGS

A.1. Network Checklist

- The configuring PC must have an Ethernet network adapter card installed, and must have the TCP/IP networking protocol installed and configured.
- The **NAVE IIC** comes with a default Static IP Address of 10.61.62.63, and a Subnet Mask of 255.255.255.0.
- Your laptop or PC should have a static IP address of 10.61.62.62 and a Subnet Mask of 255.255.255.0 to properly communicate with the **NAVE IIC**.

Use the **Network Control Panel** to assign a static IP address to your PC or laptop.

A.2. Configuring Windows® 95 or Windows® 98 for IP Networking

A.2.1. To configure TCP/IP for Windows® 95 or Windows® 98:

- a. Click **Start** from the Windows® toolbar.
- b. Select **Settings**; then select **Control Panel**.
- c. Double-click **Network**.
- d. In the list of installed components, ensure that your **Ethernet adapter**, **TCP/IP Protocol**, and **Client for Microsoft® Networks** are listed.

NOTE: It is not necessary to remove any other network components shown in the **Network** window in order to install the adapter, TCP/IP, or Client for Microsoft® Networks.

A.2.2. If you need the Ethernet Network Adapter:

- a. Click **Add**.
- b. Select **Adapter**; then click **Add** again.
- c. Select the manufacturer and model of your Ethernet adapter, and click **OK**.

A.2.3. If you need TCP/IP:

- a. Click **Add**.
- b. Select **Protocol**; then click **Add** again.
- c. Select **Microsoft**.
- d. Select **TCP/IP** and click **OK**.

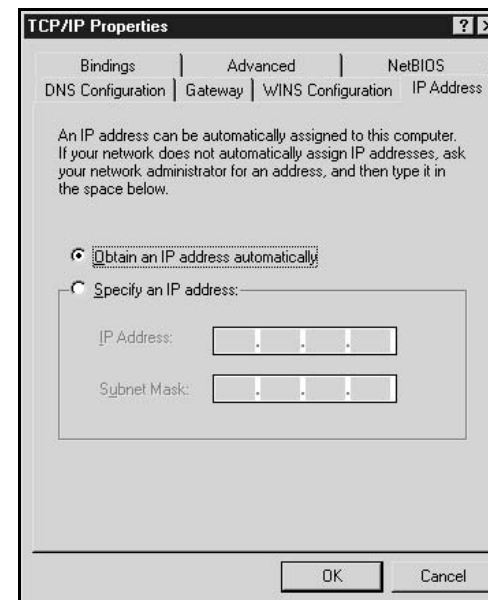
A.2.4. If you need Client for Microsoft® Networks:

- a. Click **Add**.
- b. Select **Client**; then click **Add** again.

A.3. Assigning the TCP/IP Address in Windows® 95 or 98:

A.3.1. Accessing the TCP/IP Properties Setup Window:

- a. Click **Start** from the Windows® toolbar.
- b. Select **Settings**; then select **Control Panel**.
- c. Double-click **Network**.
- d. Select the **Configuration Tab**.
- e. From the list of network components, select **TCP/IP**.
- f. If you have several TCP/IP entries in the network components list, choose the one associated with the Ethernet adapter in your PC.
- g. Click **Properties**. The **TCP/IP Properties** dialog window appears:



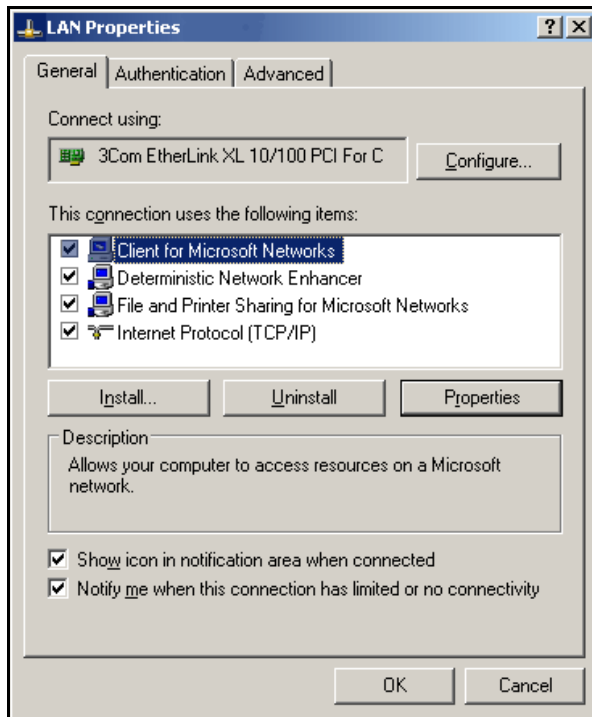
A.3.2 Setting the NAVE IIC's TCP/IP Address:

- a. Select the **IP Address Tab**.
- b. Check the **Specify an IP Address** radio button.
- c. In the **IP Address** fields, enter **10.61.62.62**. In the **Subnet Mask** fields, enter **255.255.255.0**.
- d. Click **OK**.
- e. From your browser window, enter **10.61.62.63** in the address bar to connect to the **NAVE IIC**.

A.4. Configuring Windows® XP for IP Networking

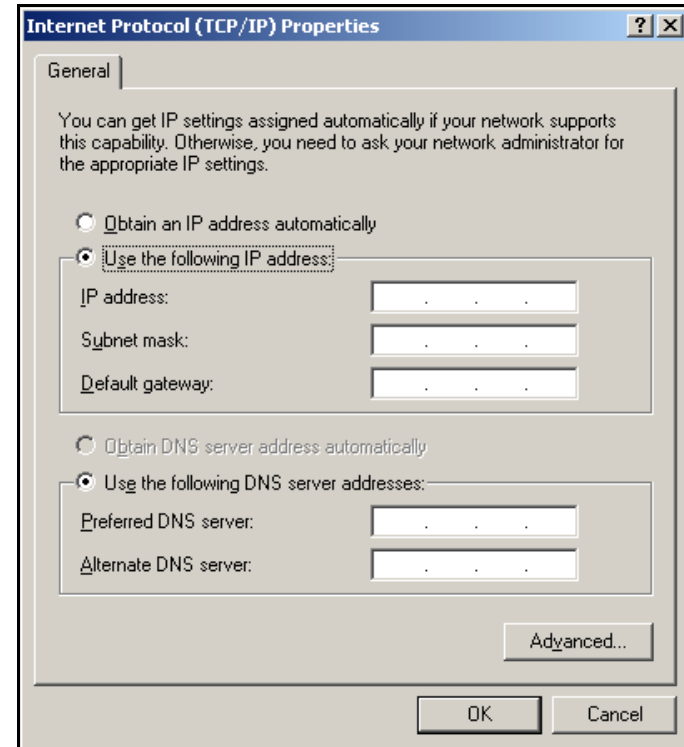
A.4.1 Accessing the Windows® XP Lan Properties Setup Window:

- a. Click **Start** from the Windows® toolbar.
- b. Select **Control Panel**.
- c. Double-click **Network Connections**.
- d. Right-click on the connection you wish to configure. Select **Properties**.
- e. The **LAN Properties** dialog window appears:



A.4.2 Setting the NAVE IIC's TCP/IP Address:

- a. Select **Internet Protocol (TCP/IP)**.
- b. Click **Properties**. The **Internet Protocol Properties** dialog window appears:



- c. Select the **Use the following IP address** radio button.
- d. Enter the static IP address **10.61.62.62** in the first field.
- e. Enter the **Subnet Mask 255.255.255.0** in the second field.
- f. Click **OK**.
- g. From your browser window, enter **10.61.62.63** in the address bar to connect to the **NAVE IIC**.

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The **Wegener NAVE IIc** is approved under **FCC Part 15B Class A** and **UL 60950 3rd Edition**.

Warranty: The following warranty applies to all **WEGENER** products:

All **WEGENER** products are warranted against defective materials and workmanship for a period of one year after shipment to customer. **WEGENER's** obligation under this warranty is limited to repairing or, at **WEGENER's** option, replacing parts, subassemblies, or entire assemblies. **WEGENER** shall not be liable for any special, indirect, or consequential damages. This warranty does not cover parts or equipment that have been subject to misuse, negligence, or accident by the customer during use. All shipping costs for warranty repairs shall be prepaid by the customer. There are no other warranties, expressed or implied, except as stated herein.

Technical Support

This guide provides information for setup and initial operation of the **NAVE IIc**. Additional information may be found in the **User's Manual** (p/n 800026-01) on the CD ROM packed with the unit, or on the www.wegener.com Web site. (Click **Support**, then select **Manuals and Code Downloads**, and search for the **NAVE IIc** in the **Manuals** product list.)

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