WEGENER
Nielsen Audio Video Encoder Compressed
(NAVE IIc^{TM})
User Manual

WEGENER®

nielsen

Document # 800026-01

WEGENER® and COMPEL® are trademarks of WEGENER Communications.

WEGENER (Wegener Communications, Inc.), a wholly-owned subsidiary of Wegener Corporation (WGNR), is an international provider of digital solutions for IP data, video and audio networks. Applications include IP data delivery, broadcast television, cable television, radio networks, business television, distance education, business music and financial information distribution. COMPEL, WEGENER's patented network control system, provides networks with unparalleled ability to regionalize programming and commercials. COMPEL network control capability is integrated into WEGENER digital satellite receivers.

A proven world leader in digital video, audio and broadcast data systems, WEGENER'S management system is certified to ISO 9001:2000.

Correspondence regarding this publication,

> 800026-01 Revision B
> Second Edition: February 2008

Should be forwarded to:

> Wegener Communications, Inc.
> Technology Park/Johns Creek
> 11350 Technology Circle
> Duluth, GA 30097-1502
>
> Phone: 770-814-4000
> Fax: 770-623-0698

The WEGENER NAVE IIc™ Nielsen Audio Encoder is approved under FCC Part 15 Subpart B Class A limits Applied.

This device contains FCC Registration Number: US:YGIMM09BUM11V92EY.

The WEGENER NAVE IIc™ Nielsen Audio Encoder is approved under UL 60950 3rd Edition.

FCC Disclaimer

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

TABLE OF CONTENTS

List of Figures

List of Tables

Chapter 1 - Overview of the NAVE IIc Encoder

The primary function of the WEGENER NAVE IIc™ Nielsen Audio Encoder (the Encoder) is to encode the Nielsen Media Research proprietary Source ID (SID) information into a compressed ATSC transport stream.

The Encoder expands upon Nielsen's audio coding-capabilities by supporting the ability to code pre-compressed MPEG-2 transport streams. The Encoder will insert Nielsen data into MPEG-2 Multi-Program Transport Streams compliant with the US ATSC standard.

A broadcast TV station employing MPEG-2 transport stream multiplexer would require a WEGENER NAVE IIc™ Nielsen Audio Encoder located downstream from the MPEG-2 multiplexing system.
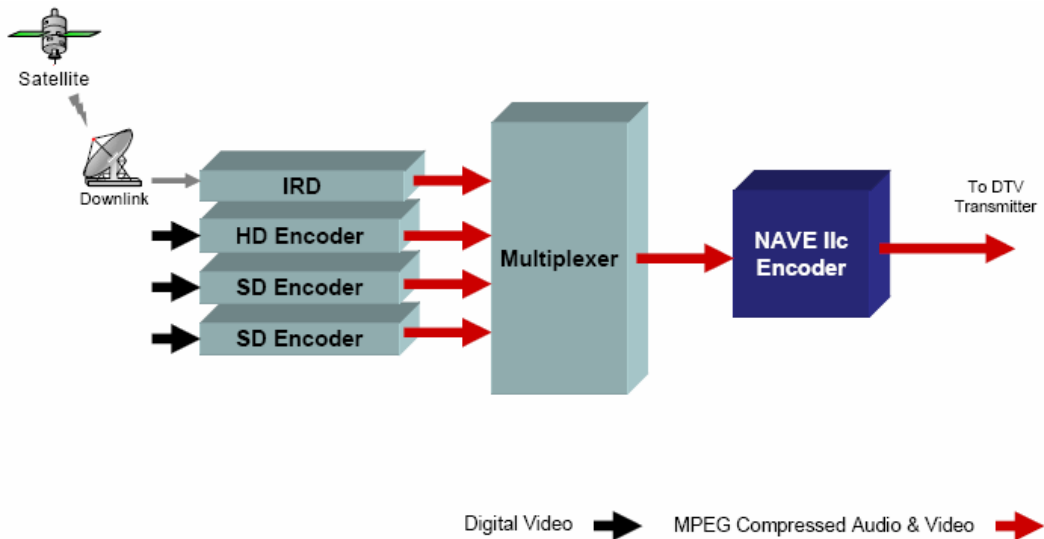
Figure 1: Transport Stream Example

The Nielsen data block normally includes, at a minimum, a SID and a time/date stamp. Typically, each program (identified by a program number or a major channel/ minor channel pair) within the transport stream is stamped with a unique SID. In such a setup, if the program includes more than one Dolby AC-3 stream, each of the AC-3 streams associated with a program are stamped with the same SID.

We strongly recommend that you connect your Encoder to an uninterruptible power source.

Encoder Support

Encoder Support

For all questions about the NAVE IIc Encoder, including installation, configuration, software upgrades, and technical support, please contact WEGENER Customer Support at:

Telephone: 770-814-4057

FAX: 770-232-0621

Email: service@wegener.com

After-Hour Service:

The Customer Support Call Center is available between 8:00 AM and 5:30 PM. For after-hour emergency service, please contact Customer Support during normal business hours to arrange for 24/7 customer service support.

To Download Software Updates:

Go to WEGENER's Download Center at:

http://wegener.com/SUPPORT/support_downloads.php.

To Return A Product For Service:

Obtain a **Return Material Authorization (RMA)** number by completing and faxing a copy of the RMA Request Form (see *Appendix B – RMA Request Form*) to 678-624-0294. You may also email the same information to:

service@wegener.com

To help us identify and control returned units, plainly write the RMA number on the **outside** of the product-shipping container. This will help us return your unit to you as quickly as possible.

Return the product, freight prepaid, to the address below:

Service Department RMA# _____
WEGENER Communications, Inc.
359 Curie Drive
Alpharetta, GA 30005

NOTE
All returned material must be shipped freight prepaid. C.O.D. shipments will not be accepted.

SID Support

For questions about SIDs, please contact **Nielsen Encoder Support** at:

Nielsen Encoder Support Group

Telephone: 800-537-4872

Email: AMOL@nielsen.com

Manuals

If you have any suggestions concerning this, or any WEGENER Manual, please E-mail them to manuals@wegener.com . If you would rather mail them, please do so to the address shown below.

If you have substantial or complex changes, our preference is that you copy the page(s) in question, mark it up, and fax or mail us the copy. We do appreciate constructive criticism.

Our Fax Number: (770) 497-0411

Our Address: Attn: Manuals
        WEGENER Communications, Inc.
        Technology Park / Johns Creek
        11350 Technology Circle
        Duluth, GA 30097-1502

Chapter 2 - Installing and Maintaining the NAVE IIc Encoder

Unpacking and Inspection

Carefully unpack the unit and inspect it for obvious signs of physical damage that might have occurred during shipment. Any damage claims must be reported to the carrier immediately. Be sure to check the package contents carefully for important documents and materials.

NOTE
Please save the packing materials and original shipping containers in case you have to return the unit for repair at some later date. Packing these units in other containers in such a way that they are damaged will void your warranty.

IMPORTANT
This is a Class A product. In a domestic environment this product may cause radio interference, in which case you may be required to take adequate measures.
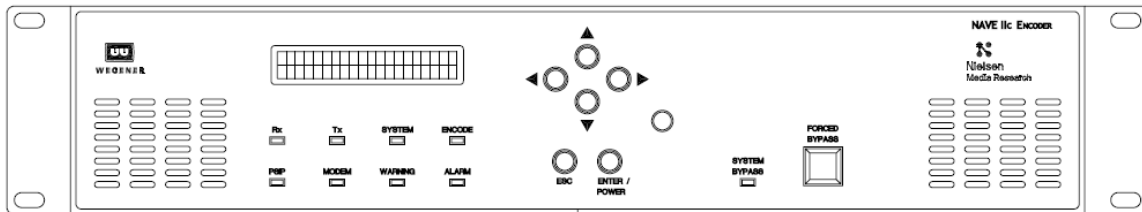
Figure 2: Front of NAVE IIc Encoder
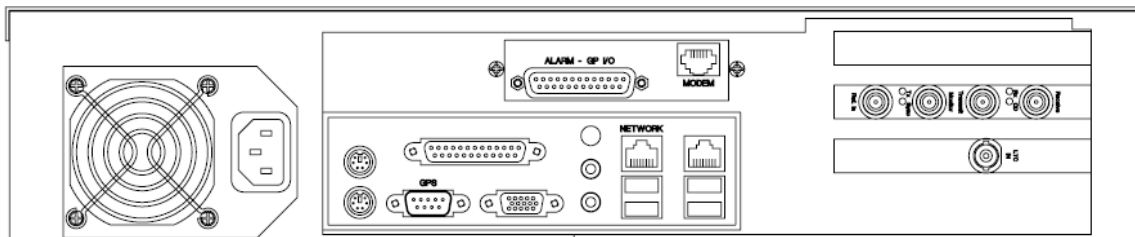
Figure 3: Back of NAVE IIc Encoder

Environmental Operating Conditions and Physical Specifications

Table 1: NAVE IIc Environmental Limits and Physical Specifications

Characteristic	Specification
Use	Indoor
Altitude	Up to 2000 meters
Temperature Range	$+10^{o}$C to $+40^{o}$C
Relative Humidity (max.)	80% for temperatures up to 31 ^{o}C decreasing linearly to 50% relative humidity at 40 ^{o}C.
Weight	24 pounds or 10.91 kilograms
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	100-220 Vac, 135 Watts, 50/60 Hz

Physical Environment

Mount the Encoder in a clean, dry environment, and do not place unsupported equipment on the unit. Make sure that total rack or breaker power consumption does not exceed the limits of the AC branch circuit, and that a reliable earth safety ground is maintained. The unit will meet the full +10°C to +40°C operating temperature specification only if adequate clearance around vent-holes is provided.

NOTE

The operating temperature of the unit is +10°C to +40°C in still air with unblocked side vents. The units may be arranged without empty space between them, so long as enough rack ventilation is provided to prevent severe heat buildup.

To avoid damage to this and other equipment, or personal injury, the following items should be strictly observed.

Location and Mounting

The NAVE IIc Encoder, which is sized at 2 RU, may be mounted in a standard 19-inch equipment rack and must be maintained in a clean, dry environment.

1. First install angle brackets or cross-supports capable of supporting both the unit and its connecting cables. Screw or bolt the supports securely to the equipment rack.

NOTE

The Encoder should be installed in such a way that a hazardous condition is not produced by uneven loading, or by resting any unsupported equipment on a rack-mounted NAVE IIc Encoder.

---

2. Place the NAVE IIc on its supports and use four anchor screws or bolts and nuts to secure the NAVE IIc front brackets to the rack.

NOTE
The front brackets must be secured to the rack. If the front brackets are left unsecured, the unit may shift forward and fall from the rack, and may result in personal injury and/or damage to the equipment.

Elevated Operating Ambient

If equipment is installed in a closed or multi-unit rack assembly, the operating ambient of the rack may be greater than the room ambient. Therefore, considerations should be given to the Manufacturer's Recommended Ambient (T_{MRA}) 40°C, or the Ambient Air Temperature inside the Mounting Rack, and not just inside the room.

Reduced Air Flow

Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised, and that a sufficient flow of cool air is maintained so that the unit's operating ambient temperature range is not exceeded. If arranged in a rack without empty spaces between units, **heat buildup must be prevented by ensuring that the front and side vents remain unblocked**, and that there is adequate clearance around the fan vent holes. The recommended unobstructed air clearance required around the ventilation openings of the unit is one inch.

Mechanical Loading

Mounting of equipment in a rack should be such that a hazardous condition is not achieved due to uneven loading. This unit is not very heavy, but total rack loading should be considered.

Circuit Overloading

When connecting the NAVE IIc Encoder unit to the power supply, review the ratings of all equipment in the circuit to ensure that the branch circuit, as well as the power source, will not be overloaded. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing

Reliable earthing of rack-mounted equipment should be maintained. Also make sure that the unit is properly grounded and attached to the power supply with a protected power strip.

⚠️ **We strongly recommend that you connect your Encoder to an uninterruptible power source.**

Desktop Installation

To set up the Encoder in a desktop environment, place it on a flat surface where it will not be subject to being hit or pushed, and will not have anything spilled or dropped on it. In addition, the cables connected to the unit should be routed so they are not hit or pulled, which might cause damage to the connectors or to the unit itself. Additionally, there should be sufficient flow of cool air so the unit stays within its operating parameters.

Rack Installation

When installed in an equipment rack, it is best that the Encoder be supported by angle brackets or cross supports. These should be screwed or bolted securely to the equipment rack, and be capable of supporting the unit and its connecting cables. If you are not sure how to support the unit, contact **WEGENER Customer Support♣**. If you cannot do that, consult your supervisor or other authority. Do NOT install the unit if you have doubts about the unit being safely supported.

There are four holes in the front brackets, which are designed to accept anchor screws. It is essential that these brackets be used so the unit cannot be moved forward and fall from the rack.

It is always best to install the angle brackets or cross-members before setting the unit in place. Before installing cables, put anchored screws or bolts-and-nuts into place on the front brackets. Failure to do this may enable the unit to be pushed out the front of the rack later on.

Ethernet Connection

If you install an Ethernet connection, ensure the cable is connected to the correct Ethernet port (see picture below).
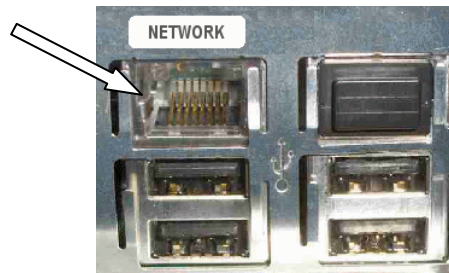
Figure 4: Correct Ethernet Port

The length of cable running to and from the unit should be kept to a minimum and must not exceed 100 meters.

⚠ **CAUTION —**
To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

⚠ **ATTENTION —**
Pour réduire les risques d'incendie, utiliser uniquement des conducteurs de télécommunications 26 AWG au de section supérleure.

♣ WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

---

System Setup and NAVE IIc Rear Panel Connections

The **Encoder** rear panel connections are shown in **Figure 5**, and **Table 2** (below) lists the connector types, pin numbers, and signal descriptions for each of the rear panel connectors used.

Alarm/General
Purpose Inputs

Phone Line
for Service

To DTV Transmitter
or Modulator

ALARM - GP I/O

MODEM

NETWORK

GPS

115 or 230 V
AC Power

GPS Time
Reference In

Audio

Computer with NACAT Software & Web Interface

HD
Decoder

LTC Time
Reference In

From Encoder or
Stream Splicer
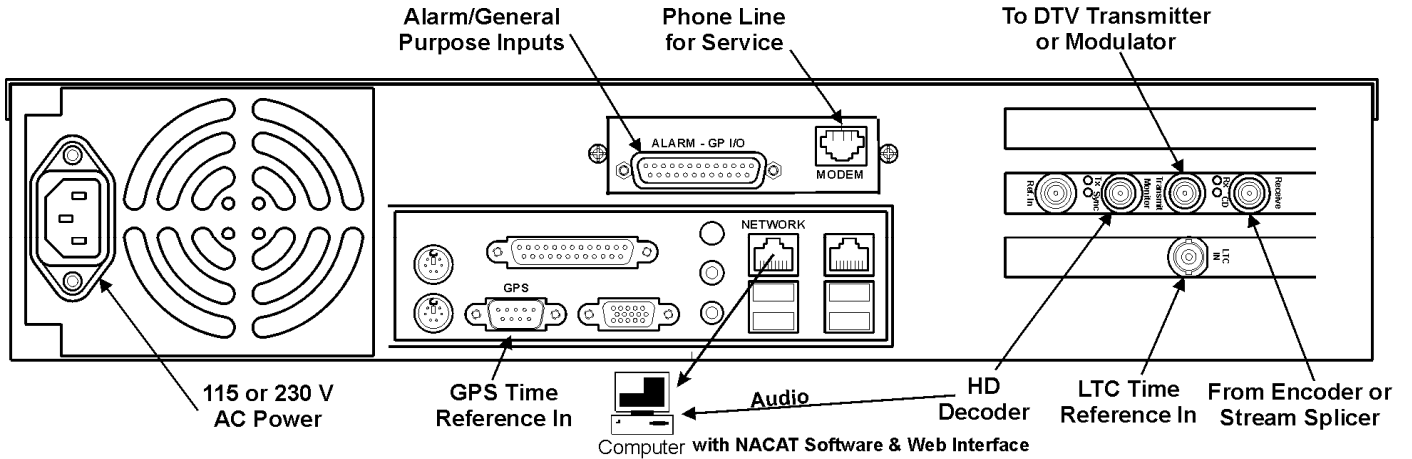
Figure 5: NAVE IIc Encoder Rear Panel with System Connections

Table 2:   NAVE IIc Encoder Interconnect Descriptions

CONNECTOR LABEL	CONNECTOR TYPE	PIN NO.	SIGNAL DESCRIPTION	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	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	9 10 11 12 13 14-25	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
GPS In (RS-232 Levels)	**9-pin D Male Plug**	1 2 3 4 5	DCD RXD TXD DTR GND	6 7 8 9	DSR RTS CTS RI
Ethernet (NETWORK, left connector), 10/100/1000 Base-T	**RJ45**	1 2 3 4	TXDO + TXDO - RXDI + N/C	5 6 7 8	N/C RXDI - N/C N/C
Modem	**RJ11**	1 2	Tip 2 (N.C.) Ring 1	3 4	Tip 1 Ring 2 (N.C.)
Receive (**Rx**, middle slot)	**BNC Jack**		SMPTE310 for Model # NAVEIIC-001 DVB-ASI for Model # NAVEIIC-002 19.393Mbps Transport Input Stream		
Transmit (Tx, middle slot)	**BNC Jack**		SMPTE310 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**		SMPTE LTC Unbalanced Input		

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

User Interfaces

The NAVE IIc Encoder has both a front panel interface, where the push buttons and LCD screen menus are used to configure the unit, and a Web browser interface that can be used to configure the unit from a PC with an Ethernet link to the unit. Before you perform any functions with the Encoder, you must configure the IP settings through the Front Panel Interface.

LCD Screen Display

Access the front panel menu found under SYSTEM CONFIGURATION / IP CONFIGURATION. The default setting for the Ethernet port is Static Mode, with an IP address of 10.61.62.63 and a subnet mask of 255.255.255.0. To configure the network port to another address or to DHCP mode, use the same menu.

NOTE
If you are not familiar with network settings, contact your network administrator, or **WEGENER Customer Support ***.

For more information on setting the Encoder's system configuration, see *Chapter 4 - Front Panel Unit Configuration Menus* on Page 23.

Web Browser Interface

For the Web interface, connect the NETWORK port on the Encoder's rear panel to your **Ethernet** network, or use an Ethernet crossover cable to connect the **Encoder** directly to a PC.

Battery Replacement

The battery inside the Encoder is intended to be replaced by service persons only.

CAUTION —
Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

ATTENTION —
Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usages conformément aux instructions du fabricant.

CAUTION —
The installation of an outdoor antenna must be performed in accordance with the NEC, specifically Articles 810 including requirements for utilization of a LISTED surge arrestor, proper grounding of the antenna, and clearances from power and lighting conductors.

---

* WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**
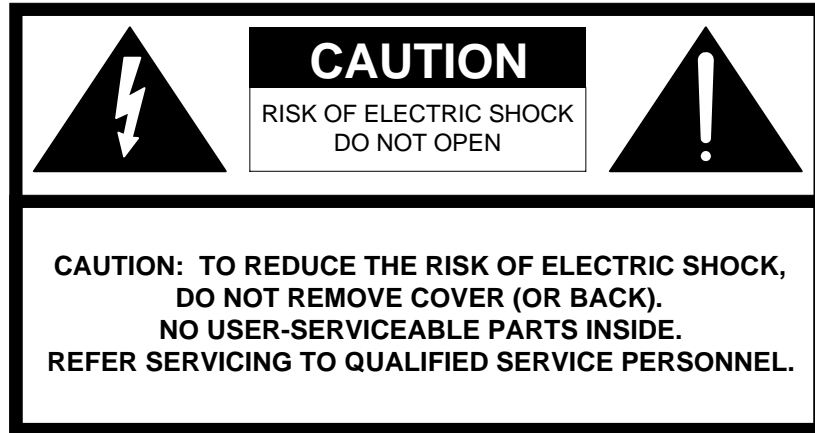
CAUTION

As this unit is intended to interface with other electrical/electronic systems, proper engineering practices must be adhered to during installation and check-out.

All AC power and ground must be installed in accordance with National Electric Code Standards as to conductor size and limitations (see NFPA 70, articles 200-280, as amended, if required), and lightning protection must be provided.

All RF interconnections must be properly shielded to prevent ingression or egression of potential interfering sources to existing services.

Any damage to this unit caused by improper wiring/interconnections will void any warranty extended.

WARRANTY

The following warranty applies to all Wegener Communications products.

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

Chapter 3 - Front Panel Monitor and Control (M&C)

The front panel consists of a 2 X 20 LCD and seven push buttons. With this, a hierarchical M&C structure is implemented. This means that all monitor and control objects (or "screens") are grouped with related screens under parent menus.

The highest level screens are called the "top-level screens" and these are peers to the **Home** Screen, the special screen to which the Encoder usually defaults. Occasionally, the default screen will not be the **Home** Screen, but another top-level screen.

LCD Screen Modes

Eligible LCD screens can be in one of the following modes:

Table 3: LCD Screen Modes

Mode	Description
VIEW	Information is being displayed on the LCD for you to view. None of the push buttons can be used for editing in this mode.
EDIT	This mode is entered from the VIEW mode. This is where you have the ability to edit a parameter. The LCD cursor will underscore the edit field when in this mode.

LCD Screen Types

The following table lists the screen types:

Table 4: LCD Screen Types

Type	Description
MENU	This is a read-only screen that displays the menu name for a command group. This command group is a set of lower-level screens. The level "beneath" a menu screen type might contain any of the other screen types (i.e., menus, info, parameter). This type of screen is read-only.
STATIC INFO	This is a read-only screen that displays information and is NOT editable—though the Encoder may or may not refresh it dynamically. The **Home** Screen is considered this type of a screen. Screens of this type have no children, so they are "leaf nodes."
SCROLL INFO	Same as STATIC INFO except that the right and left arrow keys are active to scroll through a message more extensive than can be displayed on a 20 character line. Because of this, these screens must be "lone children" of a parent Menu screen.
PARAMETER	This type of screen displays a specific parameter associated with a command group that CAN be edited. The initial value displayed is always the current unit setting. This is the only type of screen that can enter the EDIT mode. A PARAMETER screen will contain a field that can be different types (alpha-numeric or list select). There will be no carries or borrows when wrapping on a numeric field (i.e., to go from 0999 to 1000, 4 digits have to be edited). Screens of this type have no children, so they are "leaf nodes."

Push Button Definitions

The push buttons enable you to access the menu screens, enter data, and save settings. The buttons react differently based on what mode you are in and what screen type is displayed.
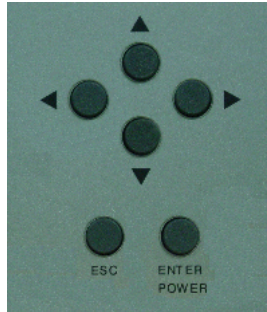
Figure 6: Front Panel Push Buttons

The following table describes this interaction.

Table 5: Front Panel Push Button Functions

LCD Mode	Push Button	LCD Screen Type	Function
VIEW	ENTER/ POWER	MENU	Go to next lower level and display the first screen on that level.
		INFO	N/A
		PARAMETER	Enter EDIT mode and set cursor on first digit if alpha-numeric or blink entire field if field type is list select. EDIT mode is only entered if you have the authorization to edit the parameter.
	ESCAPE	(All)	Go to previous (higher) level and display the current screen OR display the first screen at the current level if at the highest level. The first screen at the top level is the **Home** screen. Therefore, pressing ESCAPE numerous times (or pressing and holding) will eventually return you to the **Home** screen.
	UP	(All)	N/A
	DOWN	(All)	N/A
	LEFT	(All, except SCROLL INFO)	Display the previous screen at the current level OR wrap to the last screen if currently on the first screen.
	RIGHT	(All, except SCROLL INFO)	Display the next screen at the current level OR wrap to the first screen if currently on the last screen.
	LEFT	SCROLL INFO	Scrolls to the left in a scrolled information screen.
	RIGHT	SCROLL INFO	Scrolls to the right in a scrolled information screen.

LCD Mode	Push Button	LCD Screen Type	Function
EDIT	ENTER/ POWER	PARAMETER	If your input is valid, the Encoder accepts the changes that were made and enters the VIEW mode. If the input was invalid, the Encoder flashes an "Invalid Entry" message on the LCD momentarily before returning to the same screen in the EDIT mode again.
	ESCAPE	PARAMETER	Abort any changes made to the parameter and enter the VIEW mode.
	UP	PARAMETER	List Select: Scrolls up to next value in the list or wraps if currently on the last item in the list. Alpha-numeric: Increases the value of the current field. If numeric and the current value is 9 (if decimal) or 0xF (if hex), the value will wrap to a 0. If alpha-numeric, the value will wrap to the first ASCII value when at 0x7F.
	DOWN	PARAMETER	List Select: Scrolls down to previous value in the list or wraps to the last item if currently on the first item in the list. Alpha-numeric: Decreases the value of the current field. If numeric, and the current value is 0, the value will wrap to 9 (if decimal) or to 0xF (if hex). If alpha-numeric, the value will wrap to the last ASCII value when at the first ASCII value.
	LEFT	PARAMETER	List Select: N/A Alpha-numeric: Moves to the previous digit. Wraps to the last digit if currently on the first digit.
	RIGHT	PARAMETER	List Select: N/A Alpha-numeric: Moves to the next digit. Wraps to the first digit if currently on the last digit.

LCD Menus

This section summarizes the menus (or screens) available through the Front Panel Interface of the Encoder.
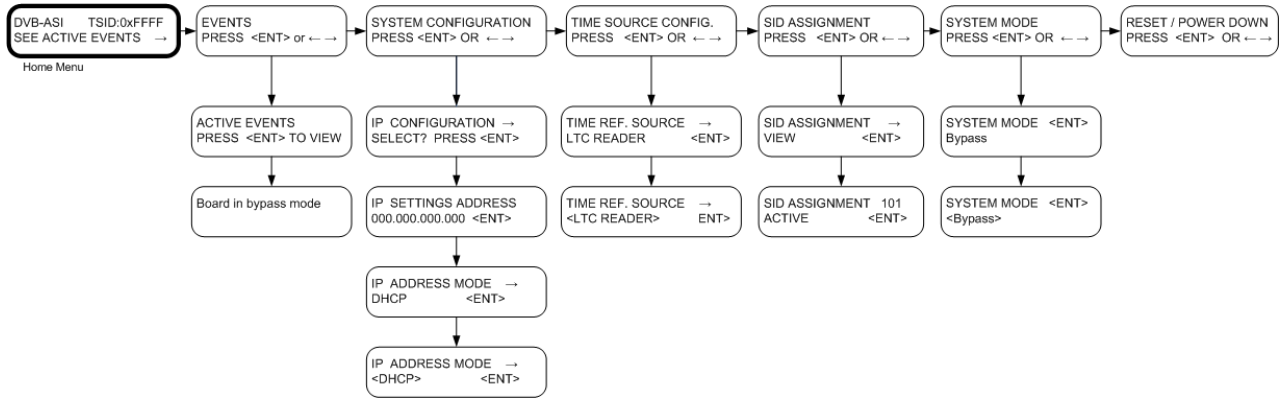
Figure 7: Front Panel LCD Menus

Default LCD Screen

No matter where you may be in the LCD menu hierarchy, if no front-panel key-press is made for more than a factory-set time (typically ~5 minutes), then the LCD menu state reverts to the default screen. The default screen is always a "Top Level"; typically, this is the "**Home** Screen". The following table illustrates these levels.

Table 6: Front Panel Menus

Main Level	Second Level	Third Level	Fourth Level
Home Screen unit not configured but in good status			
Home Screen unit configured and in good status			
Unit info screen off Home Screen			
Software Download (shown only if unit is receiving DOWNLOAD from Modem)	Software Download Please wait XXX%		
	Download Complete - Reset the unit to load new code		
Forced Bypass Mode			
Active Events Screen (this screen appears if there are active events, such as alarms or warning conditions)	Active Events (as many screens as there are current indications, with all possible messages listed in spec)		

Main Level	Second Level	Third Level	Fourth Level
System Configuration	IP Configuration	IP Settings (current settings screen)	IP Address Mode (edit settings screen)
			IP Address Static (*edit settings screen*)
			Subnet Mask (edit settings screen)
			Default Gateway (edit settings screen)
	SID Code Level	SID Code Level (*current settings screen*)	SID Code Level (*edit settings screen*)
Time Source Configuration	Time Reference Source	Time Reference Source System Clock	
		Time Reference Source LTC Reader	
		Time Reference Source NTP Server	
		Time Reference Source GPS	
	Time Reference Setup	System Clock Set Time	System Clock Time (*edit settings screen*)
		System Clock Set Date	System Clock Date (*edit settings screen*)
		NTP Server	NTP Server (edit settings screen)
		LTC Reader	LTC Reader (edit settings screen)
			LTC Reader Observe DST
		GPS	
	Time zone selection (current settings screen)	Time zone (edit settings screen)	

Main Level	Second Level	Third Level	Fourth Level
SID Assignment	SID Assignment View	View SID Assignments screen (*current settings screen*)	
	SID Assignment Add	SID Assignment Add (enter new SID)	SID/Check-digit not valid //// SID xxxx is in use try another SID (both of these are error screens)
		Assign SID xxxxx to Major/Minor CH	Major-Minor Channel (*edit settings screen*)
		Assign SID xxxxx to Program Number	Program Number (*edit settings screen*)
		Assign SID xxxxx to AC3 PID Number	AC3 PID Number (edit settings screen)
		SID Overwrite Mode (*edit settings screen*)	
		Activate SID After Save (*edit settings screen*)	
		Save SID Assignment (*edit settings screen*)	
	SID Assignment De-Act/Activate	Activate SID (*current settings screen*)	Activate SID (*edit settings screen*)
		De-Activate SID (*current settings screen*)	De-Activate SID (*edit settings screen*)
	SID Assignment Delete	Delete SID	Delete SID (*edit settings screen*)
System Mode	System Mode (*current settings screen*)	System Mode (*edit settings screen*)	
Reset / Power Down	Reset Unit	OK to Reset Unit	
	Power Unit Down	OK to Power Down	

Home Screens

Initial Power up Screen

The following two screens will appear each time at power up.

```
F R O N T     P A N E L
V E R S I O N     X X X
```

Where **XXX** is the revision of the code installed on the front panel controller. This screen will only appear for approximately five seconds.

```
        B o o t i n g
   p l e a s e     w a i t . . . . .
```

This screen will appear after the front panel version screen, and continue until the Encoder has finished its boot-up process. The dots at the end of "wait" will scroll from left to right.

Home Screen, unit not configured but in good status

This type of **Home** Screen would appear if the Encoder has not been configured but is in good operational status. This will be the default **Home** Screen straight out of the box until you configure the Encoder.

```
P R E S S     E N T E R     B U T T O N
T O     C O N F I G U R E     U N I T
```

Press <**ENT**> to access the **System Configuration** screen.

Home Screen, unit configured and in good status

This type of **Home** Screen would appear after the Encoder has been configured and is in good operational status.

```
A A A A A A A     T S I D : B B B B B B
S I D X X X X     C C C C C C C C C →
```

- Where **AAAAAAAA** is either "DVB-ASI" or "SMPTE310." This shows which type of input the Encoder is configured for (based on the input card).

- Where **BBBBBB** is the Transport Stream ID (TSID) "0xXXXX".

- Where **XXXXX** is a marquee screen that alternates between the possible set of SID numbers that have been assigned to the information that follows in **CCC...CCC**.

- Where **CCC…CCC** is a marquee which alternates between the possible information about Program Content: PSIP channel name, Major and Minor channel numbers, Program number and AC3 PID(s) associated with the SID they are assigned to. Information will be displayed for three seconds and then scroll to the next SID value, if present.

- The '→' (right-pointing arrow) field will quickly flash (alternating ON and OFF) to signal you that the RIGHT arrow button is active for user control.

Examples:

SID value and the PSIP name that is assigned to that SID.

S I D	2 5 5	S T I D - H D	→

Then to the Major Channel #

S I D	2 5 5	M A J #	3 4	→

Then to the Minor Channel #

S I D	2 5 5	M I N #	1	→

Then to the Program #

S I D	2 5 5	P R O G #	3	→

Then to the first AC3 audio PID (in decimal format)

S I D	2 5 5	A C 3 P I D	3 4 →

Then, if more than one AC3 audio PID, if not this is skipped

S I D	2 6 5 8	A C 3 P I D	3 5 →

Then to the next SID, and repeated

S I D	2 6 5 8	S T I D - S D	→

Then

S I D	2 6 5 8	M A J #	3 4	→

Then

S I D	2 6 5 8	M I N #	2	→

Then

S I D	2 6 5 8	P R O G #	4	→

Then

S I D	2 6 5 8	A C 3 P I D	3 6 →

Then

S I D	2 6 5 8	A C 3 P I D	3 7 →

Then, back to the top.

Home Screen, unit configured, with an Active Event Condition present

A A A A A A A	T S I D : B B B B B B
S E E A C T I V E E V E N T S →	

Where **AAA…AAA** is either "DVB-ASI" or "SMPTE310". This shows which type of input stream (based on the input card).

Where **BBB…BBB** is the TSID "0xXXXX". Press <**→**> to access the **EVENTS** screen.

Unit-Info Screen off Home Screen

This screen will supply unit information directly from the **Home** Screen. From the **Home** Screen, press <**ENT**> to access this screen. While in this screen, only <**ESC**> is active. Press <**ESC**> to return to the **Home** Screen. The **Unit-Info** screen is given below.

```
M O D E L     #     N A V E I I C - X X X →
S N     Y Y Y Y Y     S W     Z . Z . Z
```

Where **XXX** is the Encoder Model number (001 or 002), **YY…YY** is the Encoder serial number, and **Z.Z.Z** is the main Encoder application version.

```
U I     V E R S I O N :     X . X . X         →
```

Where **X.X.X** is the User Interface Application version.

Software Download Screens (only appears during a Modem download)

These screens will automatically appear as the **Home** Screen, overwriting any other screen. These screens will show that new code is being downloaded to the Encoder and the percentage of completion for that download. Another screen displays that the Encoder is switching to the new version of code.

```
S O F T W A R E     D O W N L O A D
P L E A S E     W A I T         X X X %
```

Where **XXX** is the percentage of code that has been downloaded to the Encoder. The indicator starts at 000%, then counts in 10ths% until it reaches 100%. After completion of the download, the Encoder will verify the new code is good and then display the following message that the new version of code will be loaded after the next Reboot cycle.

```
D O W N L O A D     C O M P L E T E
X X X X X X X X X X X X X < E S C >
```

Where *XX…XX* is a marquee screen that scrolls the following text:

"RESET THE UNIT TO LOAD NEW CODE"

Press <**ESC**> to exit this screen and access the **RESET / POWER DOWN** menu to do the reboot and load the new version of code.

Forced Bypass Mode Screen

This screen will automatically appear as the **Home** Screen overwriting any other screen. It displays that you have pressed the front panel **Forced Bypass** button. This screen will appear as long as the **Forced Bypass** button is engaged. Press <**ESC**> to leave this screen and access the **System Configuration** main screen.

```
U  N  I  T      I  S      I  N      F  O  R  C  E  D
B  Y  P  A  S  S      M  O  D  E            <  E  S  C  >
```

NOTE
If you exit the **Forced Bypass** screen to access another screen, and if no front-panel key-press is made for more than the 5-minute timeout period, then the LCD menu state reverts back to this screen. If the Forced Bypass button is disengaged during this 5-minute time period, then the LCD menu state reverts back to the default **Home** Screen.

Events Screens

These screens list the condition(s) that caused the **Warning** or **Alarm** LED to come on.

```
E  V  E  N  T  S
P  R  E  S  S            <  E  N  T  >     O  R      ←      →
```

```
A  C  T  I  V  E      E  V  E  N  T  S
X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  →
```

Where *XXX...XXX* is a user-scrollable screen that will display all the current Events. Press <→> to scroll through the display.

Chapter 4 - Front Panel Unit Configuration Menus

The following screens are the five top-level screen menus for unit configuration:

```
S Y S T E M    C O N F I G U R A T I O N
P R E S S          < E N T >    O R    ←      →
```

```
T I M E    S O U R C E    C O N F I G .
P R E S S          < E N T >    O R    ←      →
```

```
S I D    A S S I G N M E N T
P R E S S          < E N T >    O R    ←      →
```

```
S Y S T E M    M O D E
P R E S S          < E N T >    O R    ←      →
```

```
R E S E T    /    P O W E R    D O W N
P R E S S          < E N T >    O R    ←      →
```

To access the **System Configuration** screen, press <→, →> from the **Home** screen.

NOTE
When you press <**ENTER**> on a configuration change, there is always a delay before you receive any acknowledgement from the Encoder.

System Configuration

System Configuration menus consist of IP (Internet Protocol) configurations and SID code level configurations.

```
S Y S T E M    C O N F I G U R A T I O N
P R E S S         < E N T >   O R   ←   →
```

At this prompt, press <**ENT**> to access the next level, where you can select or edit the IP Configuration or the SID Code Level Configuration.

IP Configuration

```
I P    C O N F I G U R A T I O N       →
S E L E C T ?    P R E S S    < E N T >
```

Press <**ENT**> to access the next level, where you can view and edit the current selection of the IP Address Mode, either *DHCP* or *STATIC MODE*.

```
I P    S E T T I N G S    A A A A A A A A
                              < E N T >
```

Where *AAA…AAA* is the current setting for IP configuration mode, either *DHCP* or *STATIC.* This screen will then marquee to the next screen, displaying the current setting for *AAA…AAA*.

```
I P    S E T T I N G S    B B B B B B B B
X X X X X X X X X X X X X X X < E N T >
```

Where *BBB…BBB* will marquee between the three following current IP modes, *ADDRESS, SUB MASK,* and *GATEWAY*.

Where *XXX…XXX* will marquee along with *BBB…BBB* showing the current values for *BBB…BBB*.

Press <**ENT**> at any time in this screen to access the IP ADDRESS MODE screen, where you can edit the current settings for IP configurations.

```
I P    A D D R E S S    M O D E        →
  X X X X X X                     < E N T >
```

Where *XXXXXX* is the current IP Address type, either *DHCP* or *STATIC*. Press <**ENT**> at this screen to display the next screen, where you can edit the IP Address Mode.

```
I P    A D D R E S S    M O D E
< X X X X X X >                   < E N T >
```

Where *XXXXXX* is either DHCP or STATIC. Select either *DHCP* or **STATIC** by pressing <↑↓> to scroll through choices. Select the desired LCD and press <**ENT**>.

If DHCP Mode is selected, the unit will automatically go back up to the IP SETTINGS screen. You cannot edit the IP Address, Subnet Mask, and Default Gateway settings while the IP Address Type is set to DHCP.

If STATIC MODE is selected, the unit will automatically jump down into the screen below where you can enter or edit the static IP address. Or, press <←> or <→> to access the other IP configuration screens - SUBNET MASK and DEFAULT GATEWAY.

```
I P    A D D R E S S    S T A T I C    →
     X X X . X X X . X X X . X X X
```

Where *XXX.XXX.XXX.XXX* is the current IP address assigned to the unit, press <**ENT**> to access the next screen, or press <←> or <→> to access other menus.

NOTE

The IP address consists of twelve numbers - four sets of 3-digit numbers. You must enter all digits before you press <**ENT**>. If the number does not have three digits, enter 0 as a digit. For example, for an IP address of 100.10.100.10, enter <**100010100010**>.

If you press <**ENT**> before entering the 12 numbers, the system will reflect an invalid IP address.

Press <**ENT**> to edit the IP address setting manually.

```
I P    A D D R E S S    S T A T I C
   < X X X . X X X . X X X . X X X >
```

This screen will display < > on each side of IP setting. The first digit, far left, will be underlined, indicating the first position to change. Press <↑↓> to scroll through the ten digits. When you reach the desired value, press <←> or <→> to move underline to the next position. Repeat through all 12 settings. When finished, press <**ENT**> to select the new IP address. Enter leading "0" for settings that are less than three digits (i.e., if address is 172.16.140.55, enter <**172016140055**>).

The other two menu options under Static Mode are the SUBNET MASK and DEFAULT GATEWAY configuration menus.

```
S U B N E T    M A S K                →
     X X X . X X X . X X X . X X X
```

```
D E F A U L T    G A T E W A Y        →
     X X X . X X X . X X X . X X X
```

Both the Subnet and Gateway menu options operate identically to the IP Address setup menu.

SID Code Level Configuration

```
S  I  D    C  O  D  E    L  E  V  E  L     < E  N  T >
   X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X
```

Where *XXX….XXX* is the current SID Code Level setting, either Program Content or Final Distributor. Press <**ENT**> at this screen to edit the current setting.

Press <**ENT**> to edit the SID code level.

```
S  I  D    C  O  D  E    L  E  V  E  L     < E  N  T >
 < X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X >
```

Select either Program Content or Final Distributor by pressing <↑↓> to scroll through the choices. When your choice appears on the LCD, press <**ENT**> to select it. Press <**ESC**> to exit this screen.

Time Reference Source Menus

Time Reference menus consist of the following items: Time reference source selection and setup, Local UTC Offset time and the selection if Daylight Saving Time (DST) is observed.

```
T I M E    S O U R C E    C O N F I G .
P R E S S        < E N T >    O R    ←    →
```

Press <**ENT**> to access the next level, where you can select the Time Reference source and configure it, or go to Local UTC Offset, or Daylight Saving Time setting.

Time Reference Source Selection

```
T I M E    R E F .    S O U R C E      →
  X X X X X X X X X X X X     < E N T >
```

Where ***XXX…XXX*** is the current time source, which could be System Clock, NTP Server (Network Time Protocol), LTC Reader (SMPTE LTC), or GPS. Press <**ENT**> to select a different option as the Time Source. Press <**ESC**> to exit this screen.

Press <**ENT**> to select the Time Reference source.

```
T I M E    R E F .    S O U R C E
< X X X X X X X X X X X X >    < E N T >
```

The following are the four different screen choices for Time Reference Source. Press <↑↓> to scroll the four choices at this screen.

```
T I M E    R E F .    S O U R C E
< S Y S T E M    C L O C K >    < E N T >
```

or

```
T I M E    R E F .    S O U R C E
< N T P    S E R V E R >       < E N T >
```

or

```
T I M E    R E F .    S O U R C E
< L T C    R E A D E R >       < E N T >
```

or

```
T I M E    R E F .    S O U R C E
  < G P S >                   < E N T >
```

Time Reference Source Setup

```
T I M E    R E F .   S E T U P        →
X X X X X X X X X X X X   < E N T >
```

Where *XXX…XXX* is the current Time Reference Source, press <**ENT**> to access one of the following four possible screens (depending on which reference is selected). This enables you to view and configure the current Time Reference source.

System Clock Setup

If the System Clock is the current Time Reference, these menus will be available to setup this reference type.

```
S Y S T E M   C L O C K            →
   S E T   T I M E          < E N T >
```

Press <**ENT**> to access the following screen. Press <**←**> or <**→**> to scroll to the **SET DATE** menu.

```
S Y S T E M   C L O C K   T I M E
X X : X X : X X            < E N T >
```

Where *XX...XX* is the current time for the System Clock. This screen will be updated every second. Press <**ENT**> to access the following screen and edit the current Time. Time will be displayed in an hour-minute-second format.

```
S Y S T E M   C L O C K   T I M E
< X X : X X : X X >        < E N T >
```

This screen will display < > on each side of time and the first digit, far left, will be underlined, indicating the first position to change. Press <↑↓> to scroll through the ten digits. When you reach the desired value, press <**←**> or <**→**> to move underline to the next position and repeat through all six settings. When finished, press <**ENT**> to select the new Time. Press <**ESC**> to exit this screen.

```
S Y S T E M   C L O C K            →
   S E T   D A T E          < E N T >
```

Press <**ENT**> to access the following screen. Press <**←**> or <**→**> to scroll to the SET TIME menu.

```
S Y S T E M   C L O C K   D A T E
X X - X X - X X X X        < E N T >
```

Where *XXX…XXX* is the current Date for the System Clock. Press <**ENT**> to access the following screen and edit the current Date. Date will be displayed in a Month-Day-Year format.

```
S Y S T E M   C L O C K   D A T E
< X X - X X - X X X X >    < E N T >
```

This screen will display < > on each side of Date and the first digit, far left, will be underlined, indicating the first position to change. Press <↑↓> to scroll through the ten digits. When you reach the desired value, press **LEFT or RIGHT** to move underline to the next position and repeat through all eight settings. When finished, press <**ENT**> to select the new Date. Press <**ESC**> to exit this screen.

NTP Server Setup

If NTP Server is the current Time Reference, these menus will be available to set up the reference.

```
N T P     A D D R E S S          < E N T >
  X X X . X X X . X X X . X X X
```

Where *XXX…XXX* is the current IP Address for the NTP Server. If the address has never been assigned the default address will be 000.000.000.000. Press <**ENT**> to access the following setup screen.

```
N T P     A D D R E S S          < E N T >
< X X X . X X X . X X X . X X X >
```

This screen will display < > on each side of the IP address and the first digit, far left, will be underlined, indicating the first position to change. Press <↑↓> to scroll through the 10 digits. When you reach the desired value, press <←> or <→> to move underline to the next position and repeat through all 16 settings. Leading zeros must be used if the value is less than 100. When finished, press <**ENT**> to select the new NTP Server address. Press <**ESC**> to exit this screen.

LTC Reader Source Setup

If LTC Reader (SMPTE LTC) is the current Time Reference, these menus will be available to set up the reference.

```
L T C   R E A D E R   O B S E R V E
D S T       X X X          < E N T >
```

Where *XXX* is the current setting, select either **YES** or **NO**. Press <**ENT**> to access the following setup screen and edit the setting.

```
L T C   R E A D E R   O B S E R V E
D S T     < X X X >        < E N T >
```

Where *XXX* is the current setting, either **YES** or **NO**. This screen will display < > on each side of the current setting. Press <↑↓> to scroll through the two choices. When you reach the desired value, press <**ENT**> to select the new setting. Press <**ESC**> to exit this screen.

GPS Device Setup

If the GPS device is the current Time Reference, no setup menu is required.

Time Zone Selection

Time zone selection allows you to set which time zone the unit is operating in. The unit supports 74 different time zones. See *Appendix C – Time Zone Information* on Page 103 for a description of each time zone and how it is displayed on the front panel. The first screen in this menu may be in two different configurations. The first screen below shows when the currently selected time zone name is less than 14 characters in length. The second screen below shows when the current selected time zone name is greater than 14 characters in length.

```
T I M E Z O N E                         →
X X X X X X X X X X X X X X < E N T >
```

or

```
T I M E Z O N E         < E N T >       →
X X X X X X X X X X X X X X X X X X X X
```

Press <**ENT**> to access the following screen.

```
T I M E Z O N E         < E N T >
X X X X X X X X X X X X X X X X X X X X
```

Where *XXX…XXX* is the current Time Zone selection. Press <↑↓> to scroll through the choices. Once your choice appears on the LCD, press <**ENT**> to select it. Press <**ESC**> to exit this screen.

SID Assignment Menus

*SID Assignment menus consist of the following items: **View**, **Add**, **Act/De-Act**, and **Delete** a SID.*

```
S I D    A S S I G N M E N T
P R E S S         < E N T >   O R     ←     →
```

Press <**ENT**> to access the next level where you can:

- View all current SIDs assigned

- Add a new or current SID

- De-activate or activate a SID

- Delete a current SID assignment

Top Level SID Assignment Menus

```
S I D    A S S I G N M E N T           →
X X X X X X X X X           < E N T >
```

Where ***XXX...XXX*** will be, by default, VIEW, press <←> or <→> to scroll to the **ADD**, **DE-ACT/ACT**, and **DELETE** menus. Below are the four menu choices:

```
S I D    A S S I G N M E N T           →
V I E W                     < E N T >
```

or

```
S I D    A S S I G N M E N T           →
A D D                       < E N T >
```

or

```
S I D    A S S I G N M E N T           →
D E - A C T / A C T I V E   < E N T >
```

or

```
S I D    A S S I G N M E N T           →
D E L E T E                 < E N T >
```

View SID Assignments

The following menus can be used to view all current SID assignments, including those that are de-activated. All information is read from the current configuration file.

```
S  I  D     A  S  S  I  G  N  M  E  N  T            →
V  I  E  W                                   <  E  N  T  >
```

Press <**ENT**> to access the next level where you can view all current SIDs assigned.

```
S  I  D     A  S  S  I  G  N  M  E  N  T     Y  Y  Y  Y  Y
X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X
```

Where **YYYYY** is the first SID in the configuration file and *XXX…XXX* will show the settings from the configuration file. **XXX…XXX** will display the following information:

- Whether the SID is active or not active.

- What type of select mode the SID was assigned to (either Major/Minor channel, Program Number, or AC-3 PID).

- The encoding state and the PSIP name.

- Whether the SID setting should be Overwrite or Refrain.

Press <**←**> **or** <**→**> to scroll through all SIDs. All information will wrap around. Press <**ESC**> to exit this screen.

Example of screens for the following SID assignments:
- SID 255, Active, Select mode = Major/Minor, Insertion Mode = Overwrite
- SID 2658, De-Activated, Select mode = Program Channel, Insertion mode = Refrain
- SID 2659, Active, Select mode = AC3 PID, Insertion mode = Overwrite

```
S  I  D     A  S  S  I  G  N  M  E  N  T        2  5  5
A  C  T  I  V  E
```

Press <**→**> to display the following screen:

```
S  I  D     A  S  S  I  G  N  M  E  N  T        2  5  5
C  H  A  N  #        3  4  -  1
```

Press <**→**> to display the following screen:

```
S  I  D     A  S  S  I  G  N  M  E  N  T        2  5  5
E  N  C  O  D  E  D  :     Y  E  S     S  T  I  D  -  H  D
```

Press <**→**> to display the following screen:

```
S  I  D     A  S  S  I  G  N  M  E  N  T        2  5  5
O  V  E  R  W  R  I  T  E     M  O  D  E
```

Press <**→**> to display the following screen:

```
S  I  D     A  S  S  I  G  N  M  E  N  T        2  6  5  8
D  E  -  A  C  T  I  V  A  T  E  D
```

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 8
P R O G #	2	

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 8
E N C O D E D :	N O	S T I D - S D

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 8
R E F R A I N	M O D E	

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 9
A C T I V E		

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 9
A C 3 P I D	5 2	

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 9
E N C O D E D :	Y E S	S T I D - H D

Press <**→**> to display the following screen:

S I D	A S S I G N M E N T	2 6 5 9
O V E R W R I T E	M O D E	

Press <**ESC**> to exit at any time.

Add a New SID Assignment

The following menus will be used to add a new SID assignment.

S I D	A S S I G N M E N T	→
A D D		< E N T >

Press <**ENT**> to access the next level where you can add or modify a new or current SID assignment.

S I D	A S S I G N M E N T	
A D D	X X X X X Y Y	< E N T >

Where **XXXXX** is the new SID number to be assigned on the output and **YY** is the check digit for the SID. The default value will be **00000 AA**. The acceptable range for **XXXXX** is **00001 – 32,767** and the acceptable range for **YY** is **AA – ZZ**. All SID numbers must be entered as 5-digit numbers, padding with zeros in front of numbers less than five (i.e., SID 123 must be entered on the LCD as **00123**). Press <**ENT**> to access the next screen.

S I D	A S S I G N M E N T	
A D D	< <u>0</u> 0 0 0 0 A A >	< E N T >

This screen will display < > on each side of the new SID value and the first digit, far left, will be underlined, indicating the first position to change. Press <↑↓> to scroll through the values. When you reach the desired value, press <←> or <→> to move underline to the next position and repeat through all seven settings. When finished, press <**ENT**> to enter the new SID value. Press <**ESC**> to exit this screen. If <**ESC**> is pressed during a SID entry, that SID will not be assigned. After <**ENT**> is pressed, a validation is run on the new SID number, verifying that the SID and Check-digit match and that the new SID is not currently assigned in the unit. If validation passes, the display will drop down into the screen described in the section **Assigning the new SID to the Transport Stream Content** on **Page 34**.

If the SID number and the Check-digits do not pass validation the following screen will appear:

```
S  I  D  /  C  H  E  C  K  -  D  I  G  I  T
N  O  T        V  A  L  I  D                    <  E  N  T  >
```

After pressing <**ENT**> to confirm, the screen will go back to the above **SID ASSIGNMENT ADD** screen where the information can be entered again.

If a duplication of a SID number has been entered that is currently assigned in the unit, the following screen will appear:

```
S  I  D        X  X  X  X  X        I  S        I  N        U  S  E
T  R  Y        A  N  O  T  H  E  R        S  I  D  <  E  N  T  >
```

After pressing <**ENT**> to confirm, the screen will go back to the above **SID ASSIGNMENT ADD** screen where the information can be entered again.

Assigning the new SID to the Transport Stream Content

A new SID must be assigned to at least one of the following – Major/Minor Channel number, Program Number, or an AC3 PID.

If the SID number and the Check-digits pass validation and are not duplicated, the following screen will appear:

```
A  S  S  I  G  N        S  I  D        X  X  X  X  X        T  O
M  A  J  O  R  /  M  I  N  O  R        C  H  <  E  N  T  >  →
```

Where **XXXXX** is the new SID number that was entered. Press <**ENT**> to assign the SID to a Major/Minor Channel number. Or, press <→> to scroll to the next assignment option, which will be Program number.

```
A  S  S  I  G  N        S  I  D        X  X  X  X  X        T  O
P  R  O  G  R  A  M        N  U  M  B  E  R  <  E  N  T  >  →
```

Where **XXXXX** is the new SID number that was entered. Press <**ENT**> to assign the SID to a Program number. Or press <→> to scroll to the next assignment option, which will be AC3 PID Number.

```
A  S  S  I  G  N        S  I  D        X  X  X  X  X        T  O
A  C  3        P  I  D        N  U  M  B  E  R  <  E  N  T  >  →
```

Where **XXXXX** is the new SID number that was entered. Press <**ENT**> to assign the SID to an AC3 PID number. Or press <→> to scroll back to MAJOR/MINOR CH.

Assigning the new SID to Major/Minor Channel number

If you press <**ENT**> at the Assign SID XXXXX to Major/Minor CH, the following screen appears.

```
M A J O R - M I N O R    C H A N N E L
    < 0 0 - 0 0 >             < E N T >
```

Where **000-00** is the default value for each new SID assignment. This screen will display < > on each side of the Major-Minor channel and the first digit on far left will be underlined, indicating the first position to select. Press <↑↓> to scroll through the 10 digits. When the desired value is reached, press <←> or <→> to move the underline bar to the next position to be changed. Leading zeros must be used if the channel numbers are less than 100 and 10. When the new channel is set, press <**ENT**> to assign the SID to this Major-Minor channel. Press <**ENT**> to jump to the screen described in the **SID Overwrite Mode section on Page 36**. Press <**ESC**> to exit this screen.

Assigning the new SID to a Program Number

Press <**ENT**> at the Assign SID XXXXX to Program Number to access :

```
P R O G R A M    N U M B E R
    < 0 0 0 >                   < E N T >
```

Where **000** is the default value for each new SID assignment. This screen will display < > on each side of the Program numbers and the first digit on the far left will be underlined, indicating the first position to select. Press <↑↓> to scroll through the 10 digits. When the desired value is reached, press <←> or <→> to move the underline bar to the next position to be changed. Leading zeros must be used if the program number is less than 100. When the new program number is set, press <**ENT**> to assign the SID to this program number. After the you select the program number, press <**ENT**> to access the **SID Overwrite Mode** screen (discussed on **Page 36**). Press <**ESC**> to exit this screen.

Assigning the new SID to an AC3 PID

Press <**ENT**> at the Assign SID XXXXX to AC3 PID Number to access the following screen:

```
A C 3    P I D    N U M B E R
    < 0 0 0 0 0 >               < E N T >
```

Where **00000** is the default value for each new SID assignment. The AC3 PID is entered in a hexadecimal format. This screen will display < > on each side of the AC3 PID number and the first digit on the far left will be underlined, indicating the first position to select. Press <↑↓> to scroll through the ten digits. When the desired value is reached, press <←> or <→> to move the underline bar to the next position to be changed. Leading zeros must be used if the AC3 PID number is less than 10000. When the new AC3 PID number is set, press <**ENT**> to assign the SID to this AC3 PID number. After you select the PID number, press <**ENT**> to access the **SID Overwrite Mode** screen (discussed on **Page 36**). Press <**ESC**> to exit this screen.

SID Overwrite Mode

After you select the choice for SID assignment, press <**ENT**> to access the following menu and set the Overwrite or Refrain Mode.

```
S  I  D     O  V  E  R  W  R  I  T  E     M  O  D  E
<  X  X  X  X  X  X  X  X  >           <  E  N  T  >
```

Where **XXX…XXX** is either Overwrite or Refrain Mode. Press <↑↓> to select the choice, then press <**ENT**> to select. Default mode is Overwrite.

SID Activation

```
A  C  T  I  V  A  T  E     S  I  D     A  F  T  E  R
S  A  V  E        <  X  X  X  >        <  E  N  T  >
```

Where **XXX** is either YES or NO, the default is YES. Press <↑↓> to select the choice, then press <**ENT**> to select. Enter **YES** to make the new SID become active after it is saved. Enter **NO** to save the SID information but not activate the SID.

Saving the new SID assignment to the Configuration File

After you select the choice to activate the new SID, press <**ENT**> to access the following menu and save the new SID assignment.

```
S  A  V  E     S  I  D     A  S  S  I  G  N  M  E  N  T
<  X  X  X  >                          <  E  N  T  >
```

Where **XXX** is either YES or NO (the default is YES). Press <↑↓> to select the choice, then press <**ENT**> to select. Enter YES to save new SID assignment information to the configuration file. If you enter NO the new SID assignment information will not be saved to the configuration file.

De-Activate or Activate a SID

The following menus will be used to De-Activate or Active a SID assignment that has been saved in the configuration file.

```
S  I  D     A  S  S  I  G  N  M  E  N  T  <  E  N  T  >  →
D  E  -  A  C  T  /  A  C  T  I  V  A  T  E
```

Press <**ENT**> to access the next level, where you can De-Activate or Activate a SID assignment that is saved in the configuration file.

Activate SID menus

```
A  C  T  I  V  A  T  E     S  I  D
X  X  X  X  /  X  X  X  X        <  E  N  T  >  →
```

Where **XXXX/XXXXX** is a marquee screen that lists all the SIDs that are in the configuration file, but their status is set to De-Active at this time in the configuration file. If there are no SIDs in the configuration file that are currently set to De-Activate status, then the following screen will automatically appear. Press <**ESC**> to exit this screen.

This screen will automatically appear if all SIDs in the Configuration File are Active.

```
A  L  L     S  I  D  S     C  U  R  R  E  N  T  L  Y
A  C  T  I  V  E                       <  E  S  C  >  →
```

If there are SIDs in the configuration file with the status of De-Active, then press
<**ENT**> to access the following screen:

```
A C T I V A T E     S I D
< X X X X / X X X X X / X X X X X > →
```

Where **XXXX/XXXXX** is a list of all the SIDs whose status is set to De-Active.
Each SID will be separated with a "/". This screen will display < > on each side of the
list of the current SIDs and the SID number on the far left will blink on and off,
indicating the first position to select. Press <←> or <→> to move to another choice.
When the desired SID is blinking on and off, press <**ENT**> to Activate the SID.
Press <**ESC**> to exit this screen. If a SID is selected to be Activated then the following
screen will automatically appear showing the Activation on the selected SID.

This screen will appear each time a SID is activated:

```
S I D   X X X X X   I S   B E I N G
A C T I V A T E D
```

Where **XXXXX** is the SID that was selected to be Activated. After a five-second hold
period, the top **ACTIVATE SID** menu will re-appear showing all current SIDs minus
the activated SID.

De-Activate SID menus

```
D E - A C T I V A T E     S I D
  X X X X / X X X X X       < E N T > →
```

Where **XXXX/XXXXX** is a marquee screen that lists all SIDs in the configuration file,
but their status is set to be Active at this time. If there are no SIDs in the configuration
file that are currently set to Active status, then the following screen will automatically
appear.

```
A L L   S I D S   C U R R E N T L Y
I N A C T I V E             < E S C > →
```

If there are SIDs in the configuration file with the status of Active, then press <**ENT**>
to access the following screen:

```
D E - A C T I V A T E     S I D
< X X X X X / X X X X X / X X X X X > →
```

Where **XXXX/…XXXXX** is a list of all the SIDs whose status is set to Active. Each
SID will be separated with a "/". This screen will display < > on each side of the list of
the current SIDs and the SID number on the far left will blink on and off, indicating the
first position to select. Press <←> or <→> to move to another choice. When the
desired SID is blinking on and off, press <**ENT**> to De-Activate the SID. Press <**ESC**>
to exit this screen. If a SID is selected to be De-Activated, the following screen will
automatically appear showing the De-Activation on the selected SID.

```
S I D   X X X X X   I S   B E I N G
D E - A C T I V A T E D
```

Where **XXXXX** is the SID that was selected to be De-Activated. After a five-second
hold period, the top **DE-ACTIVATE SID** menu will reappear showing all current
SIDs minus the De-Activated SID.

Delete Current SID Assignment

The following menus will be used to delete a current SID assignment from the configuration file.

```
S  I  D     A  S  S  I  G  N  M  E  N  T
D  E  L  E  T  E                    <  E  N  T  >  →
```

Press <**ENT**> to access the next level and view current SID numbers assigned.

```
D  E  L  E  T  E     S  I  D        <  E  N  T  >
   X  X  X  X  X  /  X  X  X  X  X  /  X  X  X  X  X
```

Where **XXXXX/…XXXXX** is a marquee screen (only if more than three SIDs are in the configuration file) that lists all the current SID numbers assigned in the configuration file. Each SID will be separated with a "/". Press <**ENT**> to access the next screen. Press <**ESC**> to exit this screen.

```
D  E  L  E  T  E     S  I  D        <  E  S  C  >
<  X  X  X  X  X  /  X  X  X  X  X  /  X  X  X  X  X  >
```

This screen will display < > on each side of the list of the current SIDs and the far left SID will blink on and off, indicating the first position to select. Press <←> or <→> to move to another choice. When the desired SID is blinking on and off, press <**ENT**> to delete the SID. When you press <**ENT**> to delete the SID, another screen will appear confirming once again to delete the selected SID. Press <**ESC**> to exit this screen.

Press <**ENT**> to access the following screen and confirm the deletion of the SID. Press <**ENT**> to select YES to delete it, or press <**ESC**> to select NO to cancel the deletion.

```
O  K     T  O     D  E  L  E  T  E     S  I  D
X  X  X  X  X     E  N  T  =  Y  E  S     E  S  C  =  N  O
```

Where **XXXXX** is the SID number that has been selected for deletion. Press <**ENT**> to delete the SID number from the output stream. Press <**ENT**> to access the following screen and confirm that the SID number is being deleted from the configuration file. Press <**ESC**> to jump back one screen to the DELETE SID screen.

```
S  I  D     X  X  X  X  X     I  S     B  E  I  N  G
D  E  L  E  T  E  D     F  R  O  M     F  I  L  E
```

After a five second period, the DELETE SID menu will re-appear showing all current SIDs minus the deleted SID. This screen will appear each time a SID is deleted.

```
D  E  L  E  T  E     S  I  D        <  E  S  C  >
<  2  5  5  /  2  6  5  8  /  2  6  5  9  >           →
```

Continue to delete other SIDs or press <**ESC**> to exit this screen.

System Mode Menus

These menus will enable you to change the operational state of the unit.

```
S Y S T E M    M O D E
P R E S S              < E N T >    O R    ←    →
```

Press <**ENT**> to access the next level where you can place the unit into Bypass Mode or return it back to Active Mode. Press <←> or <→> to scroll through to the next menu.

```
S Y S T E M    M O D E             < E N T >
      X  X  X  X  X  X
```

Where **XXXXXX** is the current system mode state of the unit, either Active or Bypass. The Encoder returns to normal state once the problem has been corrected. The Encoder may automatically go into Bypass Mode to prevent a corruption of the transport stream.

Bypass Mode

The Encoder has two Bypass Modes - Firmware Bypass and Forced Bypass.

- **Firmware Bypass Mode** transmits the stream without processing through the Encoder. Bypass sends the stream directly from the receiver to the transmitter, bypassing the Encoder software. When you change the system mode to Bypass, you actually set the Encoder Firmware on Firmware Bypass, not the Encoder itself.

- Only two actions put you into **Forced Bypass Mode** (also called **Hardware Bypass**):
    - o Pushing the **Forced Bypass** button on the front panel of the Encoder.
    - o Pulling the power cord or powering down the Encoder from the front panel menu screen.

Changing System Status

Press <**ENT**> to access the following screen and change the system mode.

```
S Y S T E M    M O D E             < E N T >
  < X  X  X  X  X  X >
```

Where **XXXXXX** is the current system mode state of the unit, either ACTIVE or BYPASS. This screen will display < > on each side of the of the mode value. Press <↑↓> to select the value, than press <**ENT**>. Press <**ESC**> to exit this screen.

NOTE
If you try to set the unit back into ACTIVE Mode while in BYPASS because of an Alarm event, the setting will automatically revert to BYPASS after a short delay.

Reset and Power Down Menus

These menus will enable you to Reset the unit or Power the unit down.

```
R E S E T    /    P O W E R    D O W N
P R E S S       < E N T >    O R    ←    →
```

Press <**ENT**> to access the following screen and reset the unit. Press <←> or <→> to scroll through to the next menu.

Reset Unit

```
R E S E T    U N I T                    →
P R E S S       < E N T >    O R    < E S C >
```

Press <**ENT**> to reset the unit. Press <**ESC**> to exit this screen.

Press <**ENT**> to confirm that the unit is to be reset.

```
O K    T O    R E S E T    U N I T
E N T = Y E S    E S C = N O
```

Press <**ESC**> to back up a screen to the **RESET UNIT** screen.

Press <**ENT**> to access the following screen, which will confirm that the unit is resetting.

```
U N I T    I S    R E S E T T I N G
P L E A S E    W A I T
```

Power Unit Down

```
P O W E R    U N I T    D O W N           →
P R E S S       < E N T >    O R    < E S C >
```

Press <**ENT**> to power the unit down. Press <**ESC**> to exit this screen.

Press <**ENT**> to confirm that the unit is to be powered down.

```
O K    T O    P O W E R    D O W N
E N T = Y E S    E S C = N O
```

Press <**ESC**> to back up and access the **POWER UNIT DOWN** screen.

Press <**ENT**> to access the following screen and confirm that the unit is powering down.

```
U N I T    I S    P O W E R I N G
D O W N    P L E A S E    W A I T
```

Chapter 5 - Front and Rear Panel LED Assignment

The front and rear panels of the NAVE IIc Encoder include light indicators, or LEDs. These lights indicate the status of the Encoder.

Front Panel LED Assignments

Figure 8: Front Panel LED Indicators

Following are the color codes for the Front Panel LED lights:

- **Green** when the activity that it represents is progressing normally.

- **Clear** or **white** when the activity or condition is inactive (assuming that inactivity does not present a problem in regard to encoding or to data transmission).

- **Yellow** if the activity or condition is in a "warning" state (in other words, if it represents a temporary error condition that usually resolves itself quickly, with little interruption to encoding, and with no corruption of data or interruption to the output stream).

- **Red** if the activity or condition is in an "error" state (in other words, if it represents a more serious error condition that generally persists – or that results in a significant interruption to encoding, data integrity, or data transmission).

In most cases, the LEDs represent a condition that has occurred within the past two seconds. Roughly two seconds after the last occurrence of the condition, the LED reflects the new state.

If the LED is yellow, red, or (sometimes) white, it may be associated with an active event (displayed on the **Status** Tab) or with an event-log entry (on the **Event Log** Tab). In contrast to the state of the LED, the active event notification persists for roughly 10 seconds after the occurrence of the error condition, while the event log persists for months (and is stored on disk).

Information about the warnings and alarms are described in the Event Log. Following are descriptions of the LEDs and their color status.

RX - Data-receive LED

Color behavior:

- **Green** ▬ when the DVB-ASI or SMPTE-310 card is actively receiving a valid transport stream.

- **White** ▭ when the input stream is interrupted. This happens either when there is a transport stream error or when there is an extended loss of sync. An active event and a log message will accompany a white RX LED.

TX - Data-transmit LED

Color behavior:

- **Green** ▬ when the Encoder is actively processing packets and transmitting a transport stream.

- **White** ▭ when the Encoder is not actively transmitting packet data to the output. In this case, the Encoder is generally in Forced Bypass (or Firmware Bypass) Mode.

System LED

Color behavior:

- **Green** ▬ when the Transport Stream Processor has started and no alarms are present which would shut down the processor.

- **White** ▭ while the Encoder is initializing.

Encode LED

Color behavior:

- **Green** ▬ while AC-3 frames are actively being processed by the Transport Stream Processor for SID insertion and the NAVE IIc is encoding at least one audio elementary stream.

- **White** ▭ if no frames have been processed for SID insertion for at least one second. This condition will occur for a variety of reasons, including (but not limited to):
  - Improperly configured SID assignment.
  - TSID specified not matching a TSID on the input stream.
  - Invalid or interrupted input stream.

PSIP LED

Color behavior:

- **Green** ▬ if, in the past second, the Encoder has received at least one PSIP table that identifies at least one program that is also represented in at least one PMT table.

NOTE
This LED indicates that PSIP and PSI data are at least in part properly linked.

- **White** ▭ if there is no active PSIP table that represents the programs currently defined in the latest version of the PMT table(s). This may occur if:
  - There is no PSIP data for this stream
  - The PSIP data does not correctly identify programs whose program numbers match those in the PAT and PMT tables.

NOTE
In the absence of properly configured PSIP data, it may still be possible to assign SIDs to AC-3 streams by identifying either the MPEG program number or AC-3 PID of each stream to be stamped.

Modem LED

Color behavior:

- **White** ▭ if the telephone modem is not currently in use.
- **Green** ▬ if the Encoder is communicating via telephone modem.

Warning LED

Color behavior:

- **Yellow** ▬ if a warning condition has been in effect in the past second. Warning conditions are generally those that may briefly (for a second or two) impede the ability to encode the AC-3 stream, but do not corrupt or interrupt the transmission of transport-stream packets. This LED will be lit for all warning severity events.
- **White** ▭ if the system has been clear of warning conditions for at least a second.

Alarm LED

Color behavior:

- **Red** ▬ if a serious error condition has occurred within the past second or two. Error conditions are generally those that seriously interfere with the ability to encode AC-3 streams or that corrupt or stop the flow of transport-stream data through the Encoder.

- **White** ▭ if the system has been clear of error conditions for at least one second.

-

System Bypass LED

System Bypass Mode transmits the stream without processing through the Encoder. System Bypass (also called Firmware Bypass) sends the stream directly from the input to the output, bypassing the transport stream processor.

Color behavior:

- **White** ▭ while the Encoder is actively processing and transmitting packets.

- **Red** ▬ if the system is in System Bypass Mode. System Bypass occurs for one of two reasons:
  - The user has forced the Encoder into System Bypass Mode by setting the system mode to "Bypass" on the **Configuration** Tab.
  - The Encoder has failed to write any packets to the DVB-ASI or SMPTE-310 output for a period of at least one second, prompting the Encoder's watchdog to force itself into System Bypass Mode. Watchdog-induced bypass generally occurs when there has been an interruption to the input stream. In such cases, the Encoder will switch out of System Bypass Mode when valid transport-stream input resumes.

NOTE
Pressing the **Forced Bypass** button on the Front Panel will not light this LED; this LED represents System (or Firmware) Bypass only.
The **Forced Bypass** LED represents Forced (or Hardware) Bypass.

Forced Bypass LED

Color behavior:

- **Red** ▬ if the user pressed the front-panel **Forced Bypass** button to force the Encoder into Hardware Bypass Mode. This means that all transport stream processing stops until the switch is disengaged.

- **White** ▭ if the **Forced Bypass** button is not pushed.

Forced Bypass Mode

When you change the system mode to Forced Bypass, you actually set the Encoder software on Forced Bypass, not the Encoder itself. Only two actions put you into Forced Bypass Mode (also called Hardware Bypass):

- Push the **Forced Bypass** button on the front panel of the Encoder.
- Pull the power cord.

Rear Panel LED Assignments

Following are the color codes for the Rear Panel LED lights.

RX

Color behavior:

- **Flashing Red** ▬ when the receiver is enabled and the unit is receiving a valid transport stream.
- **Off** when valid data has not been received for 0.1 seconds.

CD

Color behavior:

- **Constant Red** ▬ when a carrier is detected on the receive BNC input.
- **Off** when no carrier is detected on the Receive BNC input.

TX

Color behavior:

- **Flashing Green** ▬ when the transmitter is enabled and data is being transmitted.
- **Off** when valid data has not been sent for 0.1 seconds.

SYNC

Color behavior:

- **Constant Green** ▬ when the received input stream is packet synchronized.
- **Off** when synchronization cannot be detected on Receive BNC input.

Chapter 6 - Web Interface

The Web Interface for the NAVE IIc Encoder 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 Encoder must be configured with an IP address before the Web Interface can be used. See **Chapter 4 - Front Panel Unit Configuration Menus** on Page 23 for information on configuring the Encoder's IP address.*

The Web Interface includes:

- An LED display across the top of the screen.
- Six tabs that provide access to the functions and settings of the Encoder.
- A **Help** Tab that provides access to user assistance.

Figure 9: NAVE IIc Encoder Web Interface, Main Tab

System Requirements for the Web Interface

For the best performance with the Web Interface, your PC should have this minimum configuration:

- Intel Pentium II processor or greater (233 MHz or faster)
- A web browser, such as FireFox, Internet Explorer, Netscape Navigator, etc.
- Minimum screen resolution of 800 by 768 pixels. Preferred screen resolution is 1024 by 768 pixels.

⚠️ **We strongly recommend that you connect your Encoder to an uninterruptible power source.**

Navigation Bar

The middle frame of the Web Interface will contain tabs for each of the seven pages of the interface (**Status, Stream Info, SID Assignment, Event Log, Configuration, Service,** and **Q&A/Help**). The active tab color will be lit gray in border color, with the text being a dark green color. Inactive tab color will be dark green in border color, with the text being white in color. The mouse-over tab color will be lit green in border color, with text being white in color. The **Status** Tab will be the only tab that is auto refreshed by the Encoder, once every 5 seconds. All other tabs can be refreshed by clicking the tab or by clicking the web browser's **Refresh** button.

Web Interface LED Display

The LEDs appear across the top panel of the Web Interface, and reflect the state of the front panel LEDs on the NAVE IIc Encoder.
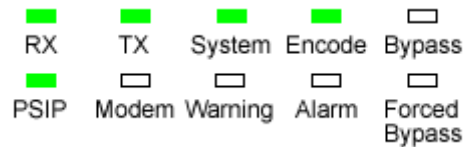
Figure 10: LED Indicators

As long as the Transport Stream Processor is running, the LEDs always appear, regardless of the tab that is selected beneath them. If the Transport Stream Processor is not running, the message "*NAVE IIc Not Responding*" appears in place of the LEDs.

For more information about the Front Panel LEDs, see ***Chapter 5 - Front and Rear Panel LED Assignment*** on Page 41.

Status Tab

*The **Status** Tab gives you information about the current status of the Encoder. The status page is divided into four sections, containing the following information: System Configuration, System information, Status, and Currently Active Events, if present. This page will be automatically refreshed once every six seconds by the unit itself.*

System Configuration		Status	
Time Reference:	NTP	PSIP Present	Yes
NTP Server:	10.45.212.200	PSI Present	Yes
Time Zone:	Eastern Time (US & Canada)	PSIP PSI Match	Yes
SID Code Level:	Program Content	TSID	0x0229
		MPEG Program Count	4
System Information		Total Audio Streams Present	4
		Total Audio Streams Encoded	4
Serial Number	1	System Mode	Active
Model	NAVEIIC-002	Encoder Date	04-14-2005
LTC Driver Version	1.0.00	Encoder Time	15:51:43
DVB-ASI Firmware Version	0x1005		
DVB-ASI Installer Version	2.2	**Active Events**	
DVB-ASI Driver Version	1.1.0		
Board Version	0x6e		
Build Date	Apr 12 2005		
OS Version	2.2.0		
System Version	0.0.2		
Application Version	0.2.4		
User Interface Version	0.2.3		

Figure 11: Web Interface Status Tab

System Configuration

Time Reference – Identifies the method that the Encoder uses to derive the time stamps that it inserts into the AC-3 streams. Time Reference will be set to one of the following four options, based on the configuration of the time-reference section of the **Configuration** tab:

- **System Clock** – The inserted time stamps will be derived from the time on the Encoder system clock. The system clock itself will be manually set and will not be synchronized with an external reference.

NOTE
The System Clock Mode is not recommended. Nielsen requires that SID timestamps be as accurate as possible in order to accurately meter time shift operations on DVRs/PVRs.

- **NTP** – The inserted time stamps will be derived from the Encoder system clock. The Encoder will update the system clock using an NTP (Network Time Protocol). This method requires that an NTP server be properly configured and online while the Encoder is running.

- **LTC** – The inserted time stamps will be derived from the time on the Encoder system clock. The Encoder will update the system clock using the SMPTE LTC (Longitudinal Time Code) input on the NAVE IIc.

- **GPS** - The inserted time stamps will be derived from a Garmin GPS (Global Positional Satellite) device connected to the Encoder's DB9 serial port (this port will be labeled **GPS** on the rear panel). The Encoder periodically checks the time/date on the GPS and syncs to that time/date. Under normal conditions, the Encoder checks GPS once every ten minutes.

NTP Server – This field appears only when the Time Reference is set to NTP. Enter an IP address in dotted notation to identify the NTP server that will be used in setting the Encoder system clock.

Does LTC Observe DST? (Yes/No) – This field appears only when the Time Reference is set to SMPTE LTC. Its setting of *Yes* or *No* indicates whether the time presented to the LTC input is automatically adjusted for Daylight Saving Time. If so, the field setting is "Yes."

Time Zone – This field displays the time zone in which the Encoder is running. For the inserted time stamp to represent the correct local time, you must set the time zone correctly before starting to encode. For a complete listing of the world time zones, see *Appendix C – Time Zone Information* on Page 103.

SID Code Level – This field identifies whether the stream is being read and processed as Program Content or Final Distributor.

NOTE
When two or more Encoders are active in the overall system, the stream may contain both Program Content and Final Distributor codes. The insertion rate decreases as the number of types of inserted codes increases.

System Information

The fields in this section identify the version or type of components installed in the NAVE IIc Encoder:

Table 7: NAVE IIc Components

Field	Meaning
Serial Number	Identifies the serial number of the NAVE IIc Encoder.
Model	Identifies whether the NAVE IIc is configured to operate in SMPTE-310 (NAVE IIc-001) or DVB-ASI (NAVE IIc-002) mode.
LTC Driver Version	Identifies the version of the LTC-reader driver.
DVB-ASI (or SMPTE-310) Firmware Version	Identifies the version of firmware installed on the DVB-ASI or SMPTE-310 card.
DVB-ASI (or SMPTE-310) Installer Version	Identifies the version of the firmware-installation software.
DVB-ASI (or SMPTE-310) Driver Version	Identifies the model of the DVB-ASI Driver.
Board Version	Identifies the model of the DVB-ASI or SMPTE-310 card.
Build Date	Identifies the date on which the Encoder software was built.
OS Version	Identifies the version of the Linux that was created for the Encoder.
System Version	Identifies the version of the supporting scripts and utilities that support the Encoder.
Application Version	Identifies the version of the NAVE IIc software, which includes the NAVE IIc engine and the communications thread.
User Interface Version	Identifies the version of the Web-based NAVE IIc Encoder User Interface.

Status

The fields in this section present an overall view of the MPEG stream being processed. A more detailed description of the stream is found on the **Stream Info** tab.

See *MPEG Transport Streams* on Page 53 for more information on PSIP and PSI.

Table 8: MPEG Stream Status Fields

Field	Meaning
PSIP Present	True if at least one PSIP table has been found in the transport stream. For a description of PSIP tables, see *Stream Info Tab* below.
PSI Present	True if at least one PSI (PAT or PMT) table has been found in the stream. For a description of PSI tables, see *Stream Info Tab* below.
PSIP PSI Match	True if at least one of the programs identified in the PSIP TVCT table is also found in the PSI (PAT/PMT) tables.
TSID	Identifies the TSID (Transport Stream ID) reported in the PAT and PSIP tables.
MPEG Program Count	Specifies the number of MPEG programs included in the transport stream, as identified by the PSIP and PSI tables. Note that this is the total number of unique programs identified in the PSIP TVCT table and the PSI (PAT/PMT) tables. If the PSIP and PSI tables are not properly formed, this number may be greater than the number of programs that actually appear in the stream.
Total Audio Streams Present	Identifies the total number of unique AC-3 streams included in the transport stream, as identified in the PSIP and PSI tables.
Total Audio Streams Encoded	Specifies the number of unique AC-3 streams (within the current transport stream) that have been presented to the transport stream processor for SID-insertion. On the **Stream Info** Tab, this typically corresponds to the number of unique audio streams for which a non-zero SID is identified.
System Mode	Specifies whether the system is in Active or Bypass Mode.
Encoder Date	Displays the current date, according to the Encoder's system clock.
Encoder Time	Displays the current time, according to the Encoder's system clock.

Active Events

Lists any events (or conditions) that have been reported in the past ten seconds. Each event is represented by a single message, displayed in red. Sample messages include:

- Board in Bypass Mode
- PSIP channel with no matching program
- No PSIP tables match programs in PAT/PMT

Stream Info Tab

*The **Stream Info** Tab displays the key characteristics of the MPEG transport stream (or ATSC stream) that the Encoder is currently receiving and processing. To understand the stream characteristics listed on this tab, you need a basic understanding of the structure of an MPEG transport stream.*

The purpose of the data display on the **Stream Info** Tab is not to provide detailed information about the transport stream and its components. Instead, the purpose is to provide you with the information that you need to plan your Nielsen SID (Stream ID) assignment strategy.

```
Faith [66-4]                              PaxWest [66-2]
Program 6 Hidden: No                      Program 4 Hidden: No
PMT PID: 0x0060                           PMT PID: 0x0040
CH TSID: 0x0229                           CH TSID: 0x0229

   - AC3 Audio PID: (0x0064)                 - AC3 Audio PID: (0x0044)
     Stream Type: 0x81 (AC3 Audio)             Stream Type: 0x81 (AC3 Audio)
     SID: 104                                  SID: 102
     Bitrate: 192000 bps                       Bitrate: 192000 bps
     Scrambled: No                             Scrambled: No
     Language: English                         Language: English
     Mode: 2/0 - L, R (stereo)                 Mode: 2/0 - L, R (stereo)
   - Video PID: (0x0061)                     - Video PID: (0x0041)
     Stream Type: 0x2 (Video)                  Stream Type: 0x2 (Video)
Worship [66-3]                            WXPX DT [66-1]
Program 5 Hidden: No                      Program 3 Hidden: No
PMT PID: 0x0050                           PMT PID: 0x0030
CH TSID: 0x0229                           CH TSID: 0x0229
   - AC3 Audio PID: (0x0054)                 - AC3 Audio PID: (0x0034)
```

Figure 12: Web Interface Stream Info Tab

MPEG Transport Streams

An MPEG transport stream is composed of one or more MPEG programs, each uniquely identified by a Program Number. An MPEG program is a collection of elements that an MPEG decoder requires to play the programming for a single minor channel. Those elements typically include (but are not limited to):

- A video component (also referred to as a video elementary stream). The video elementary stream is identified within the transport stream by a unique Video PID (Packet ID).

- One or more audio components (also referred to as audio elementary streams). When more than one audio stream is included in a single program, the individual audio streams may differ, for example, by language. Each audio elementary stream is identified within the transport stream by a unique Audio PID.

Each transport stream may contain more than one program. In fact, it is not unusual to see two, three, or even four programs (each corresponding to a single minor channel) bundled into a single transport stream. As guides to the contents of the transport stream, several types of tables are repeated frequently within the transport stream.

The first set of tables repeated throughout the MPEG stream are the PSI (Program Specific Information) tables (see also: ***Status Tab*** on Page 49). Two important PSI tables are the PAT and PMT tables:

- The PAT (Program Association Table) provides a listing of all of the MPEG programs that are included within the transport stream. Each MPEG program is identified by a unique Program Number. For each program, the PAT provides a PMT PID. The PMT PID tells us in which PMT (Program Map Table) to look to find more information about a specific MPEG program. The PAT also identifies the TSID. TSIDs uniquely identify transport streams throughout the U.S. and Canada, helping receivers in those countries to identify transport streams.

- Each section of a PMT (Program Map Table) provides detailed information regarding the contents of an individual MPEG program. Among other things, it lists (by Video and Audio PID) the video and audio elementary streams that we should expect to find within the individual MPEG program.

PSIP (Program and System Information Protocol) tables associate broadcast information with the MPEG programs defined in the PAT and PMT tables. One of the pieces of information provided by PSIP tables is the TSID (Transport Stream ID), which should correspond to the TSID listed in the PAT (described above).

One type of PSIP table is the TVCT (Terrestrial Virtual Channel Table). When present in a transport stream, the PSIP TVCT associates a major/minor channel combination with each MPEG program included in the transport stream. For each MPEG program, the TVCT also provides other channel-related information, including Channel Name and Channel TSID. Optionally, the PSIP TVCT may also list the audio and video elementary streams (by Audio PID and Video PID) that are components of each major/minor channel or program. If properly formed, the PSIP TVCT table should identify programs whose Program Numbers are listed in the PAT and PMT tables described above.

The diagram below depicts the relationship between PSI (PAT and PMT) tables, PSIP (TVCT) tables, and MPEG programs.
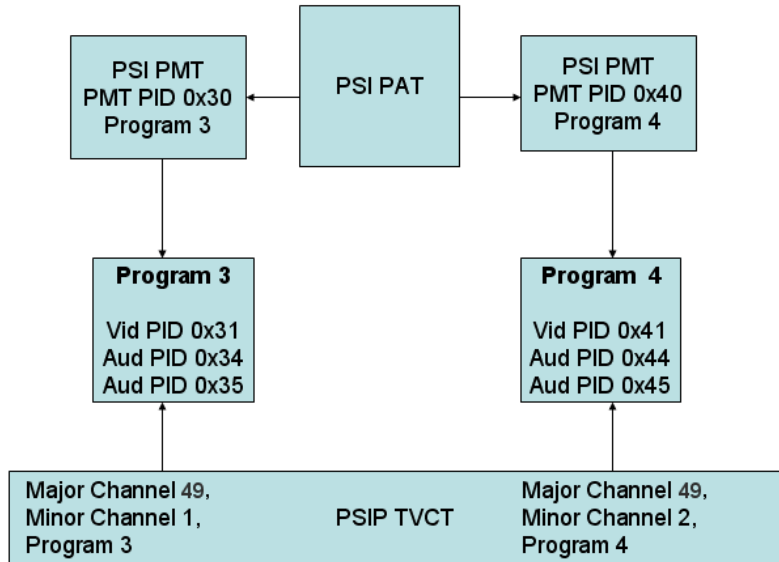
Figure 13: PSIP and PSI Tables

AC-3 Streams

The Encoder works by inserting a Nielsen SID (Source ID) and time/date stamp in frames of AC-3 data, targeting an insertion rate of one "Nielsen stamp" every two seconds. As shown in the diagram above, each AC-3 stream is uniquely identified within the transport stream by its Audio PID.

MPEG Stream Characteristics

On the **Stream Info** Tab, stream characteristics are grouped by program.

In each MPEG program grouping, you will typically see the following elements, in the order listed below.

NOTE
Fields listed in italics below will appear only when a well-formed PSIP TVCT identifies the Program Number listing of MPEG programs – and correctly associates that Program Number with a program listed in the PAT and PMT tables. This will be true for well-formed streams.

Of the fields listed below, all of the values are read from the incoming transport stream except for the SID (which the Encoder inserts), and the Nielsen-encoded flag (which is true only for AC-3 streams that are to be Nielsen-encoded).

1. Channel name [major/minor channel number]
2. Program Number, Hidden (yes/no)
3. PMT PID
4. Channel TSID
5. AC-3 Elementary Streams - AC-3 Audio PID:
    a. Stream Type (should be 0x81, representing AC-3 audio)
    b. SID (the Nielsen SID to be assigned to this AC-3 stream. 0 indicates that the stream will not be stamped)
    c. Bit Rate (Bits per second included in this AC-3 stream, where only streams with bit rates of 192,000 bps and higher can be Nielsen-encoded)
    d. Scrambled (yes/no)
    e. Language (specifies the language of this AC-3 stream)
    f. Mode (1/0 = C(mono); 2/0 = L,R(stereo); 3/0 = L,C,R; 2/1=L,R,S; 3/1=L,R,SL, SR; 2/2=L,R,SL,SR; 3/2 = 5.1 channel Dolby)
    g. Nielsen-encoded (Set to **Yes** if a SID is assigned to this AC-3 stream, to **No** if this stream is not to be watermarked with Nielsen data).
6. Video Streams:
    a. Video PID (one for each video stream in the MPEG program)
    b. Stream type (identifies whether this is MPEG-1 or MPEG-2 video, for example)
7. Audio Streams:
    a. Non-AC-3 Audio PID (one for each audio stream in the MPEG program)
    b. Stream Type (identifies whether this is MPEG-1 or MPEG-2 audio, for example)

Typical Display of Stream Characteristics

For the stream depicted in the MPEG Transport Streams diagram, the display on the **Stream Info** Tab would appear as follows (assuming that SID 123 is to be assigned to AC-3 audio PID 0x0034; that SID 456 is to be assigned to AC-3 audio PID 0x0044; and that Audio PIDs 0x0035 and 0x0045 are to remain unstamped):

Table 9: Stream Info Tab Display

Channel Name [49-1]	Channel Name [49-2]
Program 3 Hidden: No	Program 4 Hidden: No
PMT PID: 0x0030	PMT PID: 0x0040
CH TVCT: 0x0nnn	CH TVCT: 0x0nnn
- AC-3 Audio PID: (0x0034)	- AC-3 Audio PID: (0x0044)
Stream Type: 0x81 (AC-3 Audio)	Stream Type: 0x81 (AC-3 Audio)
SID: 123	SID: 456
Bitrate: 384000 bps	Bitrate: 384000 bps
Scrambled: No	Scrambled: No
Language: English	Language: English
Mode: 2/0 – L, R (Stereo)	Mode: 2/0 – L, R (Stereo)
- AC-3 Audio PID: (0x0035)	- AC-3 Audio PID: (0x0045)
Stream Type: 0x81 (AC-3 Audio)	Stream Type: 0x81 (AC-3 Audio)
SID: 0	SID: 0
Bitrate: 192,000 bps	Bitrate: 192,000 bps
Scrambled: No	Scrambled: No
Language: English	Language: English
Mode: 1/0 – C (Mono)	Mode: 1/0 – C (Mono)
Nielsen Encoded: No	Nielsen Encoded: No

SID Assignment Tab

*The primary task of the NAVE IIc Encoder is to insert Nielsen SIDs (Source IDs) into AC-3 streams based on your instructions. On the Web Interface, the primary tool that you will use to assign SIDs to AC-3 streams is the **SID Assignment** Tab.*

SID Assignment

Each SID entry must have a valid Major/Minor Channel Number, Program Number, or AC3 PID entered for encoding to begin.

You must Login to modify the the SID Assignments

Delete?	Active	SID & Check Digits	Selection Mode	PSIP Short Name	Major Channel	Minor Channel	Program Number	Audio PID	Insertion
☐	☑	101	Major/Minor	WXPX DT	66	1			Overwrite
☐	☑	102	Major/Minor	PaxWest	66	2			Overwrite
☐	☑	103	Major/Minor	Worship	66	3			Overwrite
☐	☑	104	Major/Minor	Faith	66	4			Overwrite
☐	☑		Major/Minor		0	0			Refrain
☐	☑		Major/Minor		0	0			Refrain
☐	☑		Major/Minor		0	0			Refrain
☐	☑		Major/Minor		0	0			Refrain
☐	☑		Major/Minor		0	0			Refrain

Validate SIDs

Validation will check that the currently stored set of active SIDs are valid given the current state of the input stream.

Validate

Figure 14: Web Interface SID Assignment Tab

NOTE
Once a SID strategy is determined, Nielsen EVS engineers will provide you with SIDs, each with a pair of check-digits that you must enter each time you assign the SID to an element of your transport stream.

Assigning SIDs to AC-3 streams requires a basic understanding of the structure of MPEG transport (or ATSC) streams. For an overview of the structure and characteristics, see *MPEG Transport Streams* on Page 53 and *MPEG Stream Characteristics* on Page 56. Also, refer to the stream characteristics listed on the **Stream Info** Tab before assigning Nielsen SIDs to your transport stream.

The following section illustrates how to assign a SID to a single AC-3 stream or to a group of AC-3 streams.

Overwrite/Refrain

When you use the Encoder to insert Nielsen data into streams, you do so as a Program Content provider or as a Final Distributor. In either case, it may happen that the stream that you are watermarking already has Nielsen codes in it. If the code type that you are inserting is not the same as the code type already in the stream, the Encoder will add your SID to the SIDs already present in the stream.

If the code already in the stream is the same type of code that you are about to insert (for example, they are both Program Content codes), you must determine whether you will Overwrite (or Refrain from overwriting) the existing code. Please consult **Nielsen Encoder Support (EVS)**[*] for the proper mode of operation.

In Overwrite Mode, the Encoder will Overwrite existing SIDs of the same type as the SID to be inserted (Program Content or Final Distributor).

In Refrain Mode, the Encoder will not insert any SIDs if the incoming stream already contains Nielsen SIDs of the same type.

NOTE
Existing codes can be overwritten cleanly only if they were inserted by a NAVE IIc Encoder. If they were inserted by a NAVE I or NAVE II Encoder, there will be "bleed-through" of pre-existing codes, even when you choose to Overwrite. Consult **Nielsen Encoder Support (EVS)**[*] for assistance in determining the proper operating mode for your specific situation.

If you choose to Refrain from overwriting, the Encoder will Nielsen-encode the AC-3 stream only if it finds an opportunity to do so without Overwriting existing codes.

---

[*] Nielsen Encoder Support (EVS) 800-537-4872, or EMAIL: AMOL@nielsen.com

PSIP and PSI Tables

This diagram shows Program Numbers 3 and 4, associated with Major Channel 49, Minor Channels 1 and 2, respectively:
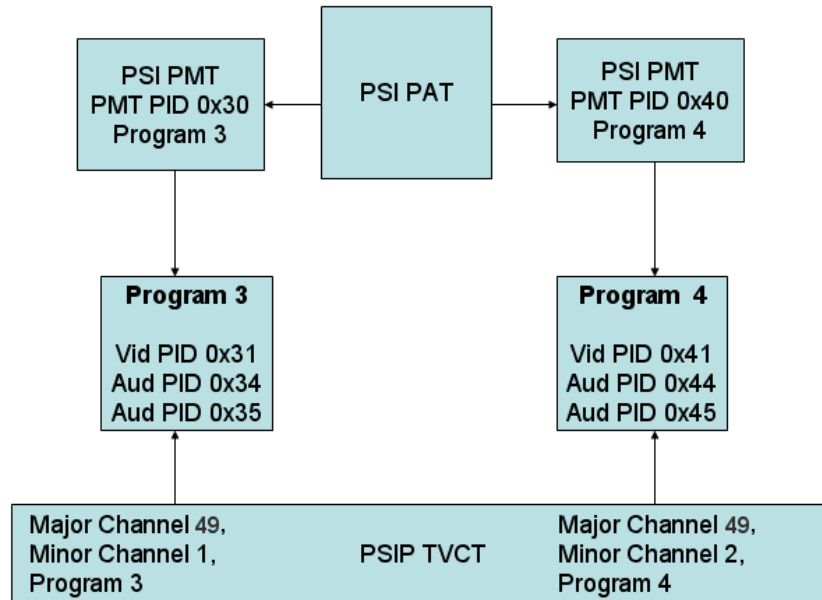
Figure 15: PSIP and PSI TABLES

Four Methods of Assigning SIDs

Each SID that you use may be assigned to an AC-3 stream or to a group of AC-3 Streams using one of four methods (meaning one of four different keys or key combinations):

Method 1. Using Major Channel Number Only:

One SID may be applied to all AC-3 streams associated with a specific major channel, regardless of minor channel number. As an example, referring to the diagram, we might want to assign SID 123 to all minor channels whose major channel is 49. This method may be used only when a well-formed PSIP TVCT table is defined in the stream – and when each of the major/minor channel combinations in the PSIP TVCT correctly references a program number in the PAT / PMT.

Method 2. Using Major Channel / Minor Channel Combination:

One unique SID may be applied to each (or to any) minor channel. As an example, referring to the diagram above, we might want to assign SID 123 to both AC-3 streams of Channel 49-1, and SID 456 to both AC-3 streams of Channel 49-2. This method may be used only when a well-formed PSIP TVCT table is defined in the stream – and when each of the major/minor channel combinations to be Nielsen-encoded is linked in the PSIP TVCT to a specific program number defined in the PAT and PMT.

Method 3. Using Program Number:

One unique SID may be applied to each (or to any) program number defined in the PAT and PMT. As an example, referring to the diagram above, we might want to assign SID 123 to both AC-3 streams in Program 3, and SID 456 to both AC-3 streams in Program 4. Note that this assignment has exactly the same effect as the assignment described in Method 2. However, SIDs may effectively be assigned to Program Numbers in the absence of PSIP tables.

Method 4. Using AC-3:

One unique SID may be applied to each (or to any) individual AC-3 stream defined in the PAT and PMT. As an example, referring to the PSIP and PSI tables, we may want to assign SID 123 to AC-3 PID 0x0034; SID 456 to AC-3 PID 0x0035; SID 789 to AC-3 PID 0x0044; and SID 987 to AC-3 PID 0x45. Like Method #3, this method can be used in the absence of PSIP tables. It requires only that the AC-3 PIDs be identified in the PMTs.

Assigning SIDs to AC-3 streams

Before you can assign SIDs, you must log on to the **SID Assignment** Tab first. Once you log on, you will have permission to modify both system-configuration and SID-assignment parameters.

To log on to the **SID Assignment** Tab:
1. Click **Login** on the **SID Assignment** Tab.
2. Enter your **Username** (default is **config**).
3. Enter your **Password** (default is **config**).
4. Proceed with assigning SIDs.

The following examples will teach how to assign SIDs to AC-3 streams, using the four methods. Refer to the **PSIP and PSI TABLES** on page 60, which shows Program Numbers 3 and 4, associated with Major Channel 49, Minor Channels 1 and 2, respectively.

Example One

Use **Method 1** to stamp all AC-3 streams in the transport stream with SID 123, whose Nielsen check-digits are AA.

1. Check the **Stream Info** Tab to make certain that a label correctly identifying the major and minor channel numbers appears above each program number on the window. For example, [49-1] should appear above Program 3, and [49-2] should appear above Program 4, where 49 designates the major channel. If this check succeeds, you can be assured that the PSIP TVCT table correctly associates the major channel number with your program streams.
2. Return to the **SID Assignment** Tab.
3. Leave the **Delete** check box unchecked.
4. Check the **Active** check box.
5. In the **SID/Check Digits** edit box, enter <**123AA**>.
6. Choose "Major/Minor" as the selection mode.
7. Enter <**49**> as the major channel number.
8. Enter <**0**> as the minor channel number (to indicate that 123 should be applied to all minor channels).
9. Assuming you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.
10. Make certain that the **Active** boxes in all other rows are left unchecked.
11. Click **Submit** to apply your SID-assignment.
12. Switch to the **Stream Info** Tab to ensure that "123" appears as the SID setting for all AC-3 streams on the page, and that the "Nielsen Encoded" field for all AC-3 streams is set to "Yes". If the information on the window appears incomplete, press <**F5**> to refresh the page.

Example Two

Use **Method 2** to assign SID 123 (check digits AA) to Channel 49-1, and to assign SID 456 (check digits BB) to Channel 49-2.

1. Check the **Stream Info** Tab to make certain that a label correctly identifying the major and minor channel numbers appears above each program number on the window. For example, [49-1] should appear above Program 3, and [49-2] should appear above Program 4, where 49 designates the major channel. If this check succeeds, you can be assured that the PSIP TVCT table correctly associates the major channel number with your program streams.
2. Return to the **SID Assignment** Tab.

3. On the first line:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check** Digits edit box, enter <123AA>.
   d. Choose "Major/Minor" as the selection mode.
   e. Enter <**49**>as the major channel number.
   f. Enter <**1**> as the minor channel number.
   g. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.
4. On the second line:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter 456BB.
   d. Choose "Major/Minor "as the selection mode.
   e. Enter <**49**> as the major channel number.
   f. Enter <**2**> as the minor channel number.
   g. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.
5. Ensure that the **Active** check boxes in all remaining rows are left unchecked.
6. Click **Submit** to apply your changes.
7. Return to the **Stream Info** Tab to ensure that AC-3 streams 0x34 and 0x35 are set to SID "123"; that AC-3 streams 0x44 and 0x45 are set to SID "456"; and that all "Nielsen Encoded" fields are set to "Yes."

Example Three

Use **Method Three** to apply SID 123 (check digits AA) to all AC-3 streams in Program 3, and apply SID 456 (check digits BB) to all AC-3 streams in Program 4.

1. Switch to the **Stream Info** Tab to ensure that Programs 3 and 4 are currently identified – and that they have AC-3 streams associated with them. The major/minor channels do not apply here.
2. Return to the **SID Assignment** Tab.
3. On Line 1:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <123AA>.
   d. Choose "Program Number" as the Selection Mode.
   e. Enter <**3**> in the **Program Number** edit box.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.

4. On Line 2:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <**456BB**>.
   d. Choose "Program Number" as the Selection Mode.
   e. Enter <**4**> in the **Program Number** edit box.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.

5. Ensure that the **Active** check boxes in all remaining rows are left unchecked.

6. Click **Submit** to apply your changes.

7. Return to the **Stream Info** Tab to ensure that AC-3 streams 0x34 and 0x35 are set to SID "123"; that AC-3 streams 0x44 and 0x45 are set to SID "456"; and that all "Nielsen Encoded" fields are set to "Yes."

Example Four

Use **Method Four** to apply a unique SID to each of the four AC-3 streams in your transport stream (SID 123, Check Digits AA, to AC-3 PID 0x0034; SID 456, Check Digits BB, to AC-3 PID 0x35; SID 789, Check Digits CC, to AC-3 PID 0x44; and SID 987, Check Digits DD, to AC-3 PID 0x45).

1. Switch to the **Stream Info** Tab to ensure that all four AC-3 PIDs are listed as components of the stream.

2. Return to the **SID Assignment** Tab.

3. On Line 1:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <123AA>.
   d. Choose "Audio PID" as the Selection Mode.
   e. Enter <**0x0034**> in the **Audio PID** edit box.
      NOTE: You must enter 0x along with the other numbers.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.

4. On Line 2:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <456BB>.
   d. Choose "Audio PID" as the Selection Mode.
   e. Enter <**0x0035**> in the **Audio PID** edit box.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.

5. On Line 3:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <**789CC**>.
   d. Choose "Audio PID" as the Selection Mode.
   e. Enter <**0x0044**> in the **Audio PID** edit box.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.
6. On Line 4:
   a. Leave the **Delete** check box unchecked.
   b. Check the **Active** check box.
   c. In the **SID/Check Digits** edit box, enter <**987DD**>.
   d. Choose "Audio PID" as the Selection Mode.
   e. Enter <**0x0045**> in the **Audio PID** edit box.
   f. Assuming that you want to Overwrite existing codes, select "Overwrite" in the **Insertion** column.
7. Ensure that all remaining **Active** check boxes are left unchecked.
8. Click **Submit** to apply the changes.
9. Return to the **Stream Info** Tab to ensure that all changes were correctly applied.

Additional Notes Regarding SID Assignments

- SID assignment lines may be deleted by checking the corresponding **Delete** checkbox(es), then clicking **Submit**. You will be asked to confirm your selection.

- You may mix Selection Modes during a single assignment session. For example, you may assign SID 123 to Channel 49-1 using the Major/Minor Channel Mode, while at the same time assigning 456 to AC-3 stream 0x44 using the Audio PID Selection Mode.

- You may validate your active SID assignments, based on the currently active transport stream, by clicking **Validate**. If any of the assignments are invalid or redundant, notes will appear at the top of the tab describing the error. **NOTE: This will only validate SID assignments that have already been submitted.**

- If any of your assignments are redundant or conflicting, the assignment closest to the top of the SID assignment list will be applied, and all other conflicting or redundant lines will be ignored. For example, if Line 1 indicates that Channel 49-1 should be stamped with SID 123, but Line 2 indicates that PID 0x0034 should be stamped with SID 456, the Encoder would apply SID 123 to PID 0x0034, in compliance with Line 1, since that is the rule closest to the top of the SID assignment list.

- All SIDs entered, by default, are to be active, unless you unselect the **Active** box for that given SID. An Active SID will be inserted into the stream if its configuration settings are met; an In-Active SID will not be inserted into the stream.

Deleting SIDs

Once you log on to the **Configuration** Tab, **Service** Tab, or **SID Assignment** Tab, you have access to delete a SID assignment line. To delete a SID:

1. Check the corresponding **Delete** checkbox(es),
2. Click **Submit**. A message appears:
   "*The SIDs highlighted in Red are going to be deleted. Are you sure?"*
3. To confirm, click **OK**. To keep the SID, click **Cancel**.

The highlighted SID will be deleted, and all other current entries moved up one level.

SID Assignment page with user not logged in:

Figure 16: SID Assignment Tab With No Modification Access

SID Assignment page with user logged in:

Figure 17: SID Assignment Tab With Modification Access

Validating SIDs

You may validate your SID assignments, based on the currently active transport stream. Enter the SID assignments, then click **Validate** at the bottom of the page.

NOTE
The **Validate** button will not appear until you assign SIDs and click **Submit**.

If any of the assignments are invalid or redundant, notes will appear at the top of the tab describing the error.

Once the SID assignments have been validated, the PSIP Short Name will be filled in automatically to provide additional information. This validation will verify once again that the information entered is still valid for the given input stream.

The following image shows the **SID Assignment** page with the user logged in and validating SID Assignments:

Figure 18: SID Assignment Tab, Validating SIDs

Event Log Tab

When the Encoder detects an error or an event of interest (configuration changes, internal test results, status changes, or errors that have occurred in the Encoder), it issues an event to the Event log.

Each event is listed on one line. Each line begins with the event code, followed by the time that the event occurred (expressed in local time as a reflection of the current time on the system clock), and ends with a descriptive log message.

Figure 19: Web Interface Event Log Tab

By default, the Event Log is stored on disk (as part of the system log). The total event log length is 10,000 entries. Once this limit is reached the oldest information will be deleted as new events arrive. Approximately 300 entries can be displayed on the screen. Once this limit is reach, a new box will appear at the top and bottom of the page displaying the option to "View Older Entries".

You may elect to store the Event log in a file of your choosing. To do so, click **Save Event Log**, then define the full path name of the file to be stored.

NOTE
Save the Event Log file as a Microsoft® WordPad® file.

Configuration Tab

*The **Configuration** Tab enables you to configure some of the settings that are displayed in read-only mode on the **Status** Tab.*

These settings include:

- Time Reference
- Encoder Time
- Encoder Date
- Time Zone
- SID Code Level
- System Mode
- System TSID

Figure 20: Web Interface Configuration Tab

Before modifying the configuration, you must first log on to the **Configuration** Tab using the user name and password provided when you received your Encoder.

NOTE
If you forget your password(s) for the **Configuration** or **Service** Tabs, call **WEGENER Customer Support**✲.

✲ ✲ WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

<table>
<tr><td colspan="1" align="center">**NOTE**</td></tr>
<tr><td>When you change configuration settings, you will not see a confirmation message. However, as soon as the change is accepted, the new value will appear on the Web Interface. If the old value appears instead, your change has not been accepted; see the **Event Log** Tab for an explanation of why this occurred.</td></tr>
</table>

Do not refresh your browser window while using the SID Assignment or Configuration Tabs; you will lose any changes you have made.

Time Reference

The method that you will use to synchronize Encoder time.

Table 10: Synchronize Time Method

Time Reference	Means This
System Clock	The inserted time stamps will be derived from the Encoder system clock. The system clock itself will be manually set and will not be synchronized with an external reference.
	NOTE: This mode of operation is not recommended. Nielsen requires that SID time-stamps be as accurate as possible in order to accurately meter time shift operations on DVRs/PVRs.
LTC	The inserted time stamps will be derived from the time on the Encoder system clock. The Encoder will update the system clock using the SMPTE LTC (Longitudinal Time Code) input on the NAVE IIc. An LTC feed must be connected to the LTC input of the Encoder. It also requires that you specify whether the time code provided by the LTC source automatically adjusts for Daylight Saving Time.
NTP	The inserted time stamps will be derived from the Encoder system clock. The Encoder will update the system clock using NTP (Network Time Protocol). This method requires that an NTP server be properly configured and online while the Encoder is running.
GPS	The inserted time stamps will be derived from a Garmin GPS (Global Positional Satellite) receiver connected to the Encoder's serial port. The Encoder checks the time/date on the GPS receiver and syncs to that time/date. Under normal conditions, the Encoder checks GPS once every ten minutes.

After selecting the Time Reference, enter the required fields to confirm date, time, and time zone. Ensure that the time zone selection correctly represents the time zone for which the Encoder output is intended.

Finally, click **Set Time Reference** to apply your changes.

Setting Date and Time

The Encoder requires an accurate clock. You can choose whether to set the time and date automatically (using an external time source) or manually (by setting the time yourself – not recommended). Use the **Configuration** Tab to manage the clock by setting:

- Time Reference
- Time
- Date
- Time Zone

NOTE
Never change settings in this window between 12:30 am and 3:30 am on the day that local Daylight Saving Time is set to begin or end.

NOTE
Before choosing your time reference, manually set the Encoder time to your current date, time and time zone. This will ensure that your time reference source is able to correctly sync with the Encoder.

To set the Encoder Date and Time Manually

1. Access the **Configuration** Tab.
2. Select **System Clock** from the drop-down list.
3. Open your computer system clock as a window on your desktop. Arrange the windows so that you can view the control clock at the same time as the Web Interface.
4. Enter the current time in this format: HH:MM:SS. (in 24-hour time).

NOTE
Set the time at least a few seconds ahead to give you enough time to click **Set Time Reference** at the correct moment.

5. Watch your control clock. When the time that you set on the Web Interface screen matches the time on the control clock (within a few seconds), click **Set Time Reference**. The Encoder time will now match your system time.
6. Enter the date in this format: MM-DD-YYYY.
7. Select a time zone.
8. Click **Set Time Reference**.

NOTE
If you use System Time to manually set the Encoder, check the time every month, as the Encoder System Clock will drift over time.

NOTE
Changing the Encoder date or time may invalidate your access to the **Config** Tab. If that happens, log on again.

To set the Encoder Date and Time Automatically

1. From the **Configuration** Tab , select either NTP, LTC, or GPS from the **Time Reference** drop-down list.

   For NTP: Enter the IP address of the NTP server in the **NTP Server** field.

   For LTC: Enter the correct date in the **Set Date:** field.

   If the time source adjusts for Daylight Saving Time, check the box in the **Does LTC Observe DST?** field.

   LTC Offset – If your LTC source is set for something other than local time, then you must tell the Encoder what the offset is from Universal Time Code (UTC) time.

   For GPS: Ensure that you connect a Garmin GPS device to the Encoder's serial port.

2. Select a time zone from the drop-down list.
3. Click **Set Time Reference**. The system will now synchronize the Encoder time based on your time source.

NOTE
After you choose and set a time reference, go to the **Status** Tab to confirm that the Encoder is set to the correct time reference, date, time, and time zone.
If you detect an error in any of these fields, return to the **Configuration** Tab, correct the error, and reset the time reference.

Time Zone

Lists all standard time zones. Select the one that applies to your geographical area. Setting the time zone correctly guarantees that the time codes inserted into the stream correctly reflect the offset of local time from UTC.

SID Code Level

You may elect to Nielsen-encode the stream as a provider of Program Content or as a Final Distributor. After making your selection, click **Set** to apply.

NOTE
When two or more Encoders are active in the overall system, the stream may contain both Program Content and Final Distributor codes. However, the insertion rate decreases as the number of types of inserted codes increases.

NOTE
Contact **WEGENER Customer Support**＊ if you are unsure of the proper configuration for your SID code level. In general, however, TV stations run in the Final Distributor Mode of operation.

System Mode

By default (as long as the DVB-ASI or SMPTE-310 input is providing a valid stream to the Encoder), the system is in Active Mode. When the system is active, the Encoder's transport stream processor is actively reading, interpreting, processing, and transmitting 188-byte transport packets.

You can set the system to Bypass Mode by selecting "Bypass" and clicking **Set**. When the system is in Bypass Mode, packets are delivered directly from the DVB-ASI (or SMPTE-310) input to the Encoder's output, bypassing the Encoder's transport stream processor altogether. Setting the system in Bypass Mode may be useful when performing system maintenance or troubleshooting. When the Encoder is in Bypass Mode, the stream will pass through the system unchanged (unencoded).

Switch the system back to Active Mode by selecting "Active" and clicking **Set**.

NOTE
The system will put itself into Firmware Bypass Mode when one or more seconds transpire without transmission of the transport packets to the output of the Encoder.
Typically, this happens when the input has lost a valid input signal, preventing the Encoder from processing the stream.
The system will automatically revert to Active Mode when a valid input stream returns.

＊ WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

---

System TSID

To guarantee that Nielsen encoding occurs only on transport streams marked with a specific transport stream ID, enter the non-zero transport stream ID (of the DTV feed associated with the NAVE IIc Encoder) in the corresponding edit box, then click **Set**. When the Encoder detects a non-zero TSID on the **Configuration** Tab , it checks the PAT, PSIP, and Channel TSIDs before applying the assigned SID to the requested stream. It will not insert SIDs into any streams for which any of these three fields fail to match your criterion.

NOTE
The TSID-check is not applied when the insertion key is the AC-3 PID.

Save Configuration Files

The current configuration may be saved to (or restored from) a user-defined file.

1. To save the current configuration to a file:
   a. Click **Save Configuration**.
   b. At the prompt, "Do you want to open or save this file?" click **Save**.
   c. In the **Save As** dialog window, type the name of the file, and navigate to the desired location.
   d. Click **Save**. The current configuration is now saved as a .txt file.
2. To open a previously-saved configuration file:
   a. Click **Browse** to locate the file.
   b. When you have the correct file, click **Open Saved Configuration**. The system applies the new configuration settings to the Encoder.

Service Tab

*The **Service** Tab enables you to perform maintenance functions on the Encoder, such as load new software, change passwords, clear the Event Log, open previous event logs, send debug commands to the Encoder, and restore factory defaults.*

Figure 21: Web Interface Service Tab

NOTE
Contact **WEGENER Customer Support*** before performing any functions on the **Service** Tab.

*** WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

Login Screen

> You must enter a Username and Password to view and modify the **Configuration** and **Service** Tabs. You must also log on to the **Configuration** Tab before you can assign SIDs on the **SID Assignment** Tab.
>
> 1. For the **Configuration** Tab, enter the following fields:
>
>> Username: **config**
>>
>> Password: **config**
>
> 2. For the **Service** Tab, enter the following fields:
>
>> Username: **service**
>>
>> Password: **service**

⚠️ **CAUTION ABOUT PASSWORDS: If you use Internet Explorer as your browser:**

Internet Explorer saves login ids and passwords in memory.

When you enter the login id and password, you receive a prompt:

"Do you want Windows to remember this password, so that you don't have to type it again the next time you visit this page?"

If you click **Yes**, then someone else may be able to log on to the **Configuration** or **Service** Tabs just by entering the user id. If you need the logon to be more secure, click **No**.

Internet Explorer also provides AutoComplete.

This feature stores information and provides possible matches from entries you have typed before. To prevent AutoComplete from completing login id and password fields:

1. From the **Tools** menu, select "Internet Options".
2. In the **Internet Options** dialog window, select the **Content** Tab .
3. In the **Personal Information** section, click [AutoComplete...] .

4. In the **Auto Complete Settings** dialog window, ensure the checkbox for User names and passwords on forms is clear.
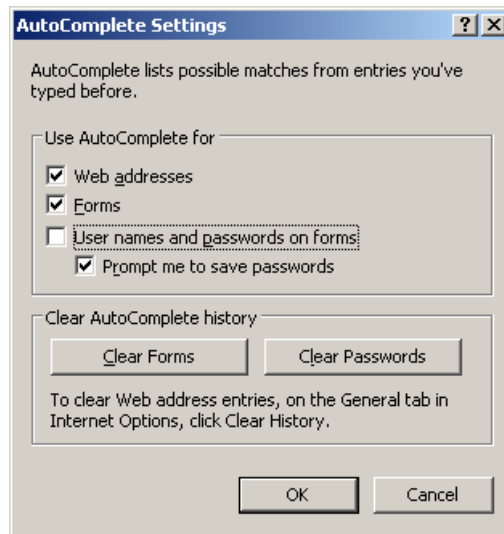

Figure 22: AutoComplete Dialog Window

5. Click **OK**.

You can also click **Clear Forms** and **Clear Passwords** to clear the AutoComplete history.

NOTE
If you forget your password(s) for the **Configuration** or **Service** Tabs, call **WEGENER Customer Support***.

Download Software

Periodically, you will receive notice that a new software release is available for the Encoder. The following information describes the two methods available for acquiring and installing these software upgrades.

Do not attempt to load software while the Encoder is on an active feed.

1. **If your Encoder does not have an internet connection, do this:**
   a. Connect a dedicated phone line to the modem on the back of the Encoder.
   b. Call WEGENER Customer Support[*] to tell them the phone number for your Encoder connection.
   c. Press the **Forced Bypass** button on the front panel of the Encoder to put it into Hardware Bypass Mode.
      Note: There may be a very brief interruption in your audio and video while the unit enters Bypass Mode.
   d. WEGENER Customer Support will transfer the software file to the Encoder via the phone line.
   e. Once the transfer is complete, reset the Encoder.
   f. After the unit has finished its reset time period, press <**ENTER**> on the front panel to check the version number (SW x.x.x) and confirm that the software has loaded correctly.
   g. Press the **Forced Bypass** button to place the unit back into operation.

---

[*] WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

2. **If you connect to your Encoder through the Internet, do this:**

   a. From your PC, access WEGENER's Download Center to locate the software upgrade file:
   http://wegener.com/SUPPORT/support_downloads.php

   b. Select the required filename and save it to a temporary drive.

   c. Once the file is saved, open the NAVE IIc Encoder Interface.

   d. Access the **Service** Tab. At the **Login** screen, enter your username and password.

   e. On the front panel of the Encoder, press the **Forced Bypass** button to put the Encoder into Hardware Bypass Mode.

   Note: There may be a very brief interruption in your audio and video while the unit enters Bypass Mode.

   f. Return to the NAVE IIc Encoder Interface. Under the section "Encoder Software", click **Browse** to navigate to the location of the software upgrade file.

   g. When you have located the correct file, click **Download Software**. The new software will be loaded on to the Encoder.

   h. A message will appear on the **Service** Tab that says, "*Software Downloaded Successfully.*"

   i. Reset the Encoder. For more information, refer to **Reset Unit** in **Chapter 4.**

   j. After the unit has finished its reset time period, check the version number on the **Status** Tab to confirm that the software has loaded correctly.

   k. Press the **Forced Bypass** button to place the unit back into operation.0.

Change Passwords

You are provided generic passwords to access the **Configuration** and **Service** Tabs of the NAVE IIc Encoder Web Interface. For added security, you should change these passwords:

1. Log on to the **Service** Tab.
2. In the **Username**: field, enter the generic username (**config** for the **Configuration** Tab login, and **service** for the **Service** Tab login).
3. In the **New Password**: field, enter a new, secure password.
4. Click **Change Password**.

Clear Event Log

The **Clear Event Log** button on the **Service** Tab enables you to clear the messages that appear on the **Event Log** Tab. These are the current messages that exist on the Encoder.

> ⚠️ **We strongly recommend that you do not erase the event log messages. These logs are vital for troubleshooting the encoder.**

Saved Log Files

The "Saved Log Files" section of the **Service** Tab displays a list of saved Event Log files. These files are created by the Encoder every day at midnight.

To view a saved log file:

1. Access the **Service** Tab. At the **Login** screen, enter your username and password.
2. Select a file name in the list, then click **Open Saved Log File**.
3. If you are on a Microsoft® Windows® PC, use the Microsoft WordPad application to open the file.

NOTE
Accessing saved log files will generally be done in a troubleshooting situation with **WEGENER Customer Support** *. In normal operation, viewing these files should not be necessary.

---

* WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

Debug Console

The **Debug Console** text box on the **Service** Tab enables you to enter infrequently used .xml commands, such as **Restore Factory Defaults**. Great care should be taken when entering commands into the **Debug Console** text box.

⚠️ **We strongly recommend that you do not use the debug console function, unless absolutely necessary. If you have any questions, contact WEGENER Customer Support✦.**

Restore Factory Defaults

This command resets the Encoder back to its original factory settings, before you changed any configurations.

To restore the Encoder's factory defaults:

1. Type this command into the **Debug Console** text box on the **Service** Tab:
   <id>debug</id>
   <value>restore_factory_defaults</value>

NOTE
To enter the text quickly, cut and paste the command from this topic in online help.

2. Click **Send Command**.
3. The Encoder temporarily goes into System Bypass Mode. When it returns to Active Mode, the Encoder configuration, including time source, time zone, SID assignments, and SID Code Level, are restored to the original factory settings.

NOTE
You will know that the Encoder is in System Bypass Mode because the front panel will display "NAVE IIc not responding."

The NAVE IIc Encoder original factory settings include:

- Time Reference set to "System Clock".
- Time Zone is set to "Eastern Time (US & Canada)".
- No SID assignments.
- SID Code Level is set to "Final Distributor".

✦ WEGENER Customer Support (770) 814-4057, FAX (770) 232-0621, or EMAIL service@wegener.com

Q & A / Help Tab

*The **Q & A / Help** Tab provides access to online help for the Web Interface. From this tab, you can search for answers to your questions about using the Web Interface. You can also find support information, troubleshooting tips, and a glossary of terms.*

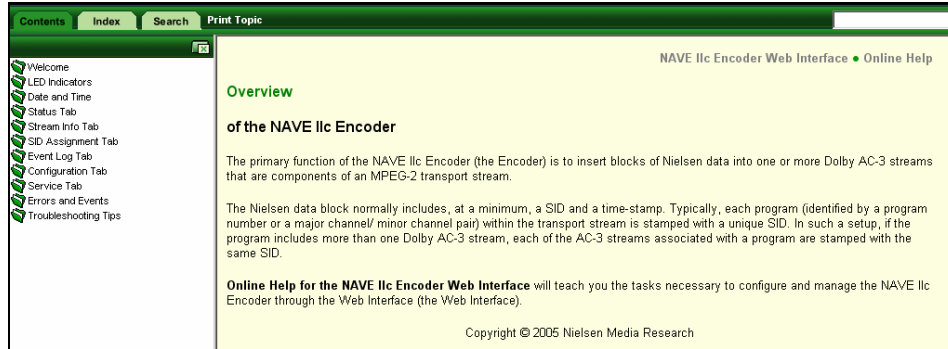To access Help, select the **Q & A/Help** Tab.

Figure 23: Web Interface Help Tab

Navigating Help

The **Contents** Tab shows a list of subject books (🗐) that contain specific topics (📖). Click a book once to expand or close the list of topics. Click a topic once to jump to that topic.

Blue underlined text represents a link to related information. Click the text to jump to a topic or section that contains this information. To return to where you were, click the **Back** button on your browser.

To Search by Index Tab

1. Select the **Index** Tab.
2. Type a keyword in the text box. As you type, the help system scrolls through the index to display titles that match your search.
3. Select an index entry to view its related topic(s).

To Search by Search Tab

1. Select the **Search** Tab.
2. Type a keyword in the text box. Press <**Enter**>. The help system displays a list of topics that contain the word you entered.
3. Single-click a topic to finish your search.
4. You can also enter text into the search bar along the top of the **Help** Tab:

To Print a Topic Page

1. Select the topic you wish to print.
2. Click **Print Topic** on the **Q & A /Help** Tab, or right-click inside the topic and select **Print**.

NOTE
Using the printer icon or the **File** menu Print command in your browser will only print the Help Table of Contents.

Chapter 7 - Setting the LTC Generator

This chapter illustrates how to set the LTC generator to accommodate time zones and Daylight Saving Time.

There are two steps required in setting up a NAVE IIc so that it automatically synchronizes to Linear Time Code (LTC) time:

1. Determine whether your LTC generator automatically adjusts for Daylight Saving Time (DST). If not, and you are in a time zone that observes DST, then do this:

    a. Set the **LTC READER OBSERVE DST** flag (on the front panel) to "YES" or "NO".

    or,

    b. Deselect the "**Does LTC Observe DST?**" checkbox (on the Web Interface).

2. Determine the offset of your local time from the time that is displayed on the LTC generator. This offset is the time that you must ADD to the time on the LTC generator in order to arrive at the current local time.

Following are some possible scenarios that you would find while configuring an LTC generator. These examples assume that your NAVE IIc is located in New York City, in the Eastern time zone.

Scenario One:

- The LTC generator shows Universal Time Code time (UTC).

- It is January, so you are currently observing Eastern STANDARD Time (EST).

- Your local time is currently five hours earlier than UTC.

    Set the offset to -5.

    (The setting of the DST flag, in this case, does not matter, since it is not currently DST.)

Scenario Two:

- The LTC generator shows UTC.

- It is June, so you are currently observing Eastern DAYLIGHT Time (EDT).

- The LTC generator does **NOT** adjust automatically for Daylight Saving Time (DST).

- Your current local time is four hours earlier than UTC, but would be five hours earlier during Eastern STANDARD time (EDT). The Encoder will make the DST adjustment for you when you turn off the "LTC Observes DST" flag.

    Set the offset to -5. Turn OFF "LTC Observes DST."

Scenario Three:

- The LTC generator shows UTC.

- It is June, so you are currently observing Eastern DAYLIGHT Time (EDT).

- The LTC generator **DOES** adjust automatically for DST.

- Your current local time is four hours earlier than UTC, but since your LTC generator is already compensating for the one hour attributable to DST, you may leave your offset at -5 year-round.

    Set the offset to -5. Turn ON "LTC Observes DST."

Scenario Four:

- The LTC generator shows Eastern STANDARD Time (EST) year-round.

- It is January, so you are currently observing Eastern STANDARD Time (EST).

- There is NO difference between the time on the LTC generator and your current local time.

    Set the offset to 0.
    (The setting of the DST flag, in this case, does not matter, since you are not currently in DST).

Scenario Five:

- The LTC generator shows Eastern STANDARD time (EST) year-round.

- It is June, so you are currently observing Eastern DAYLIGHT Time (EDT).

- There is a one hour difference between your current time and the time on the LTC generator, but only because the generator does not observe DST.

    Set the offset to 0. Turn OFF "LTC Observes DST."

Scenario Six:

- The LTC generator correctly shows the current local time year-round (it shows EST during Eastern Standard Time and EDT during Daylight Saving Time).

    Set the offset to 0. Turn ON "LTC Observes DST."

The table below illustrates the required setting for the time zones listed.

Table 11: LTC Generator Settings

Time Zone	UTC (LTC does NOT adjust for local DST)	UTC (LTC DOES adjust for local DST)	Local Time (LTC does NOT adjust for local DST)	Local Time (LTC DOES adjust for local DST)
Atlantic Daylight Time	Offset: -4 DST Flag: OFF	Offset: -4 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Atlantic Standard Time	Offset: -4 DST Flag: OFF	Offset: -4 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Eastern Daylight Time	Offset: -5 DST Flag: OFF	Offset: -5 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Eastern Standard Time	Offset: -5 DST Flag: OFF	Offset: -5 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Central Daylight Time	Offset: -6 DST Flag: OFF	Offset: -6 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Central Standard Time	Offset: -6 DST Flag: OFF	Offset: -6 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Mountain Daylight Time	Offset: -7 DST Flag: OFF	Offset: -7 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Mountain Standard Time	Offset: -7 DST Flag: OFF	Offset: -7 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Pacific Daylight Time	Offset: -8 DST Flag: OFF	Offset: -8 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Pacific Standard Time	Offset: -8 DST Flag: OFF	Offset: -8 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Alaska Daylight Time	Offset: -9 DST Flag: OFF	Offset: -9 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Alaska Standard Time	Offset: -9 DST Flag: OFF	Offset: -9 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Hawaii-Aleutian Daylight Time	Offset: -10 DST Flag: OFF	Offset: -10 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Hawaii-Aleutian Standard Time	Offset: -10 DST Flag: OFF	Offset: -10 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON
Samoa Standard Time	Offset: -11 DST Flag: OFF	Offset: -11 DST Flag: ON	Offset: 0 DST Flag: OFF	Offset: 0 DST Flag: ON

Appendix A - Troubleshooting

This chapter discusses common problems and provides solutions.

Stream Info Tab

Missing Nielsen-encoded Streams

*Problem: The **Stream Info** Tab shows all of the correct SID assignments, but the Nielsen decoder does not show any Nielsen-encoded streams. However, the Encoder is transmitting a good stream that appears not to have audio or video problems.*

- If you are running in Final Distributor Mode, are there Final Distributor codes already in the stream? Is the SID-Assignment line set to REFRAIN? Were the existing codes inserted by a NAVE IIc?

    Try this:
    1. If older encoders somewhere in the chain have inserted codes and the SID-assignment line is set up to REFRAIN, the Encoder will not Overwrite the codes with those that you have assigned.
    2. Even if the SID-assignment line is set to OVERWRITE, you may not see the code-insertion rate that you expected if there are existing codes. The Encoder is unable to align with codes inserted by older encoders to perform an accurate or reliable OVERWRITE.
    3. You may need to remove upstream NAVE II Encoders from the system if the SID-insertion rate is unacceptable. If the AC-3 date rate is below 192000 bps, the Encoder cannot insert SIDs.

⚠️ **Existing codes can be overwritten cleanly only if they were inserted by a NAVE IIc Encoder. If they were inserted by a NAVE I or NAVE II Encoder, there will be "bleed-through" of pre-existing codes, even when you choose to overwrite.**

Consult Nielsen Encoder Support✦ for assistance in determining the proper operating mode for your specific situation.

- Is the outgoing cable connected to the correct output port of the Transport Stream I/O card?

    Try this:
    There are two output ports on the Encoder. One is a monitor-only port; the other is the transmitter port. Only the transmitter port carries the encoded stream.

✦ Nielsen Encoder Support (EVS) 800-537-4872, or EMAIL: AMOL@nielsen.com

---

SIDs Are Set to 0

*Problem: On the **Stream Info** Tab, all of the SIDs are set to 0. Nothing is encoding.*

- SID assignments could be set incorrectly.

    Try this:

    Review the **Stream Info** page. Note the relationship between Major/Minor channels, program number, and AC-3 PIDs. Switch to the **SID Assignment** Tab. Consult your notes to ensure that the assignments are correct.

- The Encoder is filtering by TSID.

    To permit selective encoding of audio streams, the NAVE IIc Encoder has the capability of TSID filtering. Audio streams with the specified TSID are encoded, and other streams are not. TSID filtering is disabled when the System TSID value on the **Configuration** Tab is set to 0.

    Try this:

    On the **Stream Info** Tab or **Status** Tab, check Stream TSID. On the **Configuration** Tab, ensure that your TSID assignment matches, or is set to 0.

- Incorrect check digits supplied for SID?

    Try this:

    Re-check SID and check-digits to ensure that they are correct.

Information Does Not Reflect Configuration

Problem: The information on the Stream Info Tab does not reflect your configuration. The channel information (major/minor/name) appears on the right, without any programs or AC-3 *streams. The programs and AC-3 streams appear on the left, not associated with major/minor channel numbers or channel names.*

- Either PSIP tables are badly formed, or they have been misread.

    Try this:

    First, try to refresh the screen by clicking **Submit** on the **SID Assignment** Tab (no need to change any settings if they already reflect your preferences). Click **Submit** to force the Encoder to clear and reread the PSI and PSIP tables. This refresh procedure may resolve the problem.

    If not, there may be a problem with the formation of your PSIP tables. Use an ATSC / MPEG-2 analyzer to evaluate the stream, and then correct the PSIP tables to identify the correct MPEG-2 program numbers.

SID Assignment

SID Assignment Fails

*Problem: When I try to assign a SID using the **SID Assignment** Tab, the SID field turns red, and the SID assignment fails.*

- You may not have entered the correct check-digits for the SID.

    Try this:
    You must type two capital letters immediately following the last digit of the SID. These two "check digits" are supplied by Nielsen when you are assigned SIDs for your program feeds. If you have forgotten them or suspect that the letters that you are using are incorrect, contact **Nielsen Encoder Support:**

Telephone:	800-537-4872
Email:	AMOL@nielsen.com

Timestamps

Timestamps Are Off

Problem: When I use a Nielsen decoder to monitor the inserted codes, I notice that the time-stamps seem to be slightly off.

- Your system clock may need to be adjusted.

    Try this:
    1. If you are not running with an external time source, manually set the system clock using the **Configuration** Tab. Refer to **To set the Encoder Date and Time Manually** on page 72 or search online help for instructions.
    2. If you are using NTP as an external source, ensure that the address of the NTP server is listed correctly on the **Configuration** Tab and that the physical connection to the NTP server is correct.
    3. If you are using **LTC** as an external source, ensure that the LTC input is correctly connected to an LTC source – and that the time on the LTC source is correct.
    4. If you are using **GPS** as an external source, ensure that you connect a Garmin GPS device to the Encoder's serial port.

Timestamps Are Off by Several Hours

Problem: When I use a Nielsen decoder to monitor the inserted codes, I notice that the time stamps are off by several hours, but the minutes and seconds fields seem to be correct.

- You may have incorrectly identified the time zone where your Encoder is running.

    Try this:
    On the **Configuration** Tab, set the **Time Zone** field to the correct time zone and apply your change.

LEDs

Troubleshooting the Front Panel LEDs

RX - Data-receive LED: White ▭ when the input stream is interrupted. This happens either when there is a carrier error or when there is an extended loss of sync. An active event and a log message will accompany a white RX LED.

Encode LED: White ▭ if no frames have been presented for SID insertion for at least one second. This condition will occur for a variety of reasons, including (but not limited to):
- Improperly configured SID assignment.
- TSID specified not matching a TSID on the input stream.
- Invalid or interrupted input stream.

Bypass LED: Red ▬ if the system is in Firmware-Bypass Mode. Firmware Bypass occurs for one of two reasons:
- The user has forced the system into Bypass Mode by setting the system mode to BYPASS on the **Configuration** Tab.
- The Encoder has failed to write any packets to the DVB-ASI or SMPTE-310 output for a period of at least one second, prompting the watchdog to force the unit into Bypass Mode. Watchdog-induced bypass generally occurs when there has been an interruption to the input stream. In such cases, the Encoder will switch out of Bypass Mode when valid transport-stream input resumes.

PSIP LED: White ▭ if there is no active PSIP table that represents the programs currently defined in the latest version of the PMT table(s). This may occur if:
- There is no PSIP data for this stream
- The PSIP data does not correctly identify programs whose program numbers match those in the PAT and PMT tables.

NOTE
In the absence of properly configured PSIP data, it may still be possible to assign SIDs to AC-3 streams by identifying either the program number or AC-3 PID of each stream to be stamped.

LEDs (continued)

TX and RX lights Are Unlit

Problem: The Encoder is running, and I see valid video and hear good audio, but the TX and RX lights are unlit and there seems to be no encoding going on.

- If the **Forced Bypass LED** is on, someone has engaged the **Hardware Bypass** button.

    Try this:
    Push the **Hardware Bypass** button (on the front panel) again to disengage it.

- If the **System Bypass** LED is on, someone may have selected "Bypass" on the **Configuration** Tab of the Web Interface.

    Try this:
    Log on to the **Configuration** Tab and select "Active" instead of "Bypass."

SMPTE LTC Timecode Issues

The SMPTE timecode generator must derive its timing reference from GPS (UTC time). A color-locked timecode generator will not work, as this device will introduce approximately .86 seconds of drift per day. A GPS-based SMPTE timecode generator will typically slew its timecode output by adding an additional frame to its output to compensate for timing differences between the SMPTE time and true GPS time.

The SMPTE timecode generator must be running in Drop Frame mode. Non-Drop Frame mode is less accurate and causes the SMPTE timecode generator's output to accumulate a drift of .86 seconds from true GPS time before the generator is resynced each day.

The SMPTE LTC input on the NAVE IIc is unbalanced. Thus, if you are running timecode in your plant as balanced, you must go through some type of balancing transformer or DA (distribution amplifier) that can convert the balanced SMPTE LTC feed to an unbalanced LTC feed.

Stations unable to satisfy the above requirements will need to use the NAVE IIc's GPS option or NTP option:

- **GPS Mode** - The NAVE IIc is designed to use a GPS device that is able to provide a NMEA-compliant output; however, the only supported device is the Garmin GPS-35. The GPS-35PC is designed to be powered from a cigarette lighter, so you must adapt the device to a wall mount transformer (the GPS-35PC is specified to run on a supply voltage from 6 to 40 volts).
  For a more complete solution, Beagle Software (www.beaglesoft.com) offers units with wall mount power supplies.

NOTE
Ensure that your GPS device is positioned OUTSIDE of your location, so that it can communicate (interference-free) with satellites.

- **NTP Mode** - NTP mode requires that your TV station or facility has a local NTP Network Time Protocol server. If such a device is not available, Beaglesoft offers an NTP server package that can be installed on an old PC using an NTP time-server package. Beagle Software's NTP package is called ClockWatch® Star Sync; it includes a GPS receiver and NTP time-server software.

Time Synchronization

GPS Log Message

Problem: The Event Log shows this message: "Unable to detect satellites for GPS reading!"

- The GPS may not be able to "see" enough satellites to get an accurate time reading.

  Try this:

  Ensure that your GPS device is positioned OUTSIDE of your location, so that it can communicate, interference-free, with satellites. If necessary, reset the device.

Managing Multiple Encoders

Using NetBios Names to Connect to the NAVE IIc

Problem: We manage several Encoders, and they all have different IP addresses.

- If you connect to multiple NAVE IIc Encoders, and find it inconvenient to remember the IP addresses, you may want to assign a unique name to each Encoder. Each NAVE IIc Encoder can then be accessed by typing its name into the Internet Explorer address box, in place of the IP address. The procedure below illustrates how to assign a name to an Encoder.

NOTES
This procedure should only be used for units with a static IP address. The name assigned to an Encoder will only work for the same IP address. Since an Encoder set for DHCP may be assigned a different IP address when the Encoder is power cycled, the name can become invalid once the new IP address is assigned by the DHCP server.
This function will only work for the PC on which the name was assigned. If multiple PCs are used to connect to the Encoder, the Encoder name will have to be set on each PC using this procedure.
The Encoder name must be entered without any spaces.

Try this:
1. On your hard drive, create or modify the **LMHOSTS** file (no extension) in the "**C:\WINNT\SYSTEM32\DRIVERS\ETC**\" directory.
2. In the **LMHOSTS** file, add a line for each Encoder that will be controlled from the PC.
3. Each line should contain the following information:

    <encoder IP address>   <encoder NAME>   #PRE   #<Comments>

    Shown here is an example:

    10.45.212.239   NAVEIIcNUMBER1   #PRE   #Sample Comment
4. Once a name has been assigned to each Encoder, save the **LMHOSTS** file and restart the PC.
5. In the future, you can access an Encoder by entering its name in the Internet Explorer address box.

Appendix B – RMA Request Form

service@wegener.com   Fax (678) 624-0294

Company Name: _____

Bill-To Address: _____

_____

_____

_____

Ship-To Address: _____

_____

_____

Contact Name: _____

Phone #   (____) ____ - _____   Fax #: (____) ____ - _____

Complete Model #: _____

Serial #: _____

In Warranty: Yes ☐   No ☐

Problem: _____

_____

_____

_____

Additional Comments: _____

_____

_____

_____

_____

Record of Revisions			
DATE OF CHANGE	**REV. LEVEL**	**PAGE NO.**	**DESCRIPTION OF CHANGE**
08/24/01	A		Initial Release

Service Return Address

Service Department RMA# _____

WEGENER Communications, Inc.

359 Curie Drive

Alpharetta, GA 30005

Service Contact Numbers and Email Address

Voice: (770) 814-4057

FAX: (770) 232-0621

E-mail: service@wegener.com

Appendix C – Time Zone Information

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
0	Casablanca Monrovia	Africa/Casablanca	00:00	None
1	Dublin Edinburgh Lisbon London	Europe/Lisbon	00:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
2	Amsterdam Berlin Bern Rome Stockholm Vienna	Europe/Berlin	01:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
3	Belgrade Bratislava Budapest Ljubljana Prague	Europe/Prague	01:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
4	Brussels Copenhagen Madrid Paris	Europe/Madrid	01:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
5	Sarajevo Skopje Sofija Vilnius Warsaw Zagreb	Europe/Sarajevo	01:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
6	West Central Africa	Africa/Luanda	01:00	None

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
7	Athens Istanbul Minsk	Europe/Athens	02:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
8	Bucharest	Europe/Bucharest	02:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
9	Cairo	Africa/Cairo	02:00	04/27/07* 09/28/07 04/25/08 09/26/08 04/24/09 09/25/09
10	Harare	Africa/Harare	02:00	None
11	Helsinki Riga Tallinn	Europe/Helsinki	02:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
12	Jerusalem	Asia/Jerusalem	02:00	04/01/07* 10/01/07 04/01/08 10/01/08 04/01/09 10/01/09
13	Baghdad	Asia/Baghdad	03:00	04/01/07* 10/01/07 04/01/08 10/01/08 04/01/09 10/01/09
14	Kuwait Riyadh	Asia/Kuwait	03:00	None
15	Moscow St. Petersburg Volgograd	Europe/Moscow	03:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
16	Nairobi	Africa/Nairobi	03:00	None
17	Tehran	Asia/Tehran	03:30	03/21/07* 09/21/07 03/20/08 09/20/08 03/21/09 09/21/09
18	Abu Dhabi Muscat	Asia/Muscat	04:00	None

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
19	Baku Tbilisi Yerevan	Asia/Baku	04:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
20	Kabul	Asia/Kabul	04:30	None
21	Ekaterinburg	Asia/Yekaterinburg	05:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
22	Islamabad Karachi Tashkent	Asia/Karachi	05:00	None
23	Calcutta Chennai Mumbai New Delhi	Asia/Calcutta	05:30	None
24	Katmandu	Asia/Katmandu	05:45	None
25	Almaty Novosibirsk	Asia/Almaty	06:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
26	Astana Dhaka	Asia/Dhaka	06:00	None
27	Sri Jayawardenepura	Asia/Colombo	06:00	None
28	Rangoon	Asia/Rangoon	06:30	None
29	Bangkok Hanoi Jakarta	Asia/Bangkok	07:00	None
30	Krasnoyarsk	Asia/Krasnoyarsk	07:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
31	Beijing Chongqing Hong Kong Urumqi	Asia/Hong_Kong	08:00	None
32	Irkutsk Ulaan Bataar	Asia/Irkutsk	08:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
33	Kuala Lumpur Singapore	Asia/Singapore	08:00	None
34	Perth	Australia/Perth	08:00	None
35	Taipei	Asia/Taipei	08:00	None
36	Osaka Sapporo Tokyo	Asia/Tokyo	09:00	None
37	Seoul	Asia/Seoul	09:00	None
38	Yakutsk	Asia/Yakutsk	09:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
39	Adelaide	Australia/Adelaide	09:30	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
40	Darwin	Australia/Darwin	09:30	None
41	Brisbane	Australia/Brisbane	10:00	None
42	Canberra Melbourne Sydney	Australia/Canberra	10:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
43	Guam Port Moresby	Pacific/Guam	10:00	None

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
44	Hobart	Australia/Hobart	10:00	03/25/07* 10/07/07 03/30/08 10/05/08 03/29/09 10/04/09
45	Vladivostok	Asia/Vladivostok	10:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
46	Magadan Solomon Is. New Caledonia	Asia/Magadan	11:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
47	Aukland Wellington	Pacific/Aukland	12:00	03/18/07* 10/07/07 03/16/08 10/05/08 03/15/09 10/04/09
48	Fiji Kamchatka Marshall Is.	Pacific/Fiji	12:00	None
49	Nuku'alofa Tongatapu	Pacific/Togatapu	13:00	None
50	Azores	Atlantic/Azores	-01:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09
51	Cape Verde Is.	Atlantic/Cape_Verde	-01:00	None
52	Mid Atlantic	Atlantic/South_Georg	-02:00	None
53	Brasilia	Brazil/East	-03:00	02/18/07* 10/21/07 02/17/08 10/19/08 02/15/09 10/18/09
54	Buenos Aires Georgetown	America/Buenos_Aires	-03:00	None
55	Greenland	America/Thule	-03:00	03/25/07* 10/28/07 03/30/08 10/26/08 03/29/09 10/25/09

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
56	Newfoundland	Canada/Newfoundland	-03:30	04/01/07* 10/28/07 04/06/08 10/26/08 04/05/09 10/25/09
57	Atlantic Time (Canada)	Canada/Atlantic	-04:00	04/01/07* 10/28/07 04/06/08 10/26/08 04/05/09 10/25/09
58	Caracas La Paz	America/Caracas	-04:00	None
59	Santiago	America/Santiago	-04:00	03/10/07* 10/14/07 03/08/08 10/12/08 03/14/09 10/11/09
60	Bogota Lima Quito	America/Bogota	-05:00	None
61	Eastern Time (US & Canada)	EST5EDT	-05:00	03/11/07* 11/04/07 03/09/08 11/02/08 03/08/09 11/01/09
62	Indiana (East)	America/Indianapolis	-05:00	None
63	Central America	America/Belize	-06:00	None
64	Central Time (US & Canada)	CST6CDT	-06:00	03/11/07* 11/04/07 03/09/08 11/02/08 03/08/09 11/01/09
65	Mexico City	America/Mexico_City	-06:00	04/01/07* 10/28/07 04/06/08 10/26/08 04/05/09 10/25/09
66	Saskatchewan	Canada/Saskatchewan	-06:00	None
67	Arizona	US/Arizona	-07:00	None
68	Mountain Time (US & Canada)	MST7MDT	-07:00	03/11/07* 11/04/07 03/09/08 11/02/08 03/08/09 11/01/09

ID	REPRESENTATIVE CITIES	TIME ZONES DISPLAYED ON FRONT PANEL AND WEB INTERFACE	OFFSET FROM UTC (STD)	UPCOMING DST TRANSITION DATES (ON *)
69	Pacific Time (US & Canada) Tijuana	PST8PDT	-08:00	03/11/07* 11/04/07 03/09/08 11/02/08 03/08/09 11/01/09
70	Alaska	US/Alaska	-09:00	03/11/07* 11/04/07 03/09/08 11/02/08 03/08/09 11/01/09
71	Hawaii	US/Hawaii	-10:00	None
72	Midway Island Samoa	US/Samoa	-11:00	None
73	Eniwetok Kwajalein	Pacific/Kwajalein	-12:00	None

Appendix D – Glossary

A

AC-3
Acronym for Dolby Digital, which is an audio compression algorithm developed by Dolby Labs. Dolby's AC-3 encoding algorithm is part of the US ATSC standard for DTV broadcasting. A method of multi-channel audio coding developed by Dolby Laboratories. AC-3 refers to the 5.1-channel Dolby Digital surround sound available for DVDs, HDTV, and various other digital programming.

AES
Audio Engineering Society.

ASI
Asynchronous Serial Interface (digital television).

Audio PID
A PID that identifies an MPEG-2 transport packet that holds audio data.

D

Date/Time Stamp
The incrementing date/time code data that individually identifies Nielsen-encoded audio.

Decoder
A device that monitors and extracts Nielsen audio codes from an audio signal.

DVR/PVR
Digital Video Recorder, Personal Video Recorder.

E

Elementary Stream
A compressed bit stream that includes video, audio, or data. This stream represents the preliminary stage of the Packetized Elementary Stream (PES) which, in turn, can make up either MPEG-2 Program Streams or Transport Streams.

Encoder
A device that places data in an audio signal by utilizing the Nielsen NAES coding algorithm.

F

Final Distributor
A television broadcaster or network that aggregates and distributes television content to TV viewers. Examples include cable networks like ESPN and CNN and local broadcast stations like WFLA and WABC.

G

GPS   Global Positioning Satellite.

L

LCD   Liquid Crystal Display.

LED   Light Emitting Diode.

LTC   Longitudinal Time Code. A SMPTE-derived standard for distributing
                       timing information throughout a facility.

LTC Reader   Longitudinal Time Code input. This input is a hardware component of
                       the NAVE IIC Encoder. It allows the Encoder software to read a BCD
                       time-code from an LTC generator, translate that time-code into a
                       Nielsen time-stamp, and insert it into the transport stream.

M

MPEG   Motion Picture Experts Group. The original standards body that
                       defined the MPEG-1 and MPEG-2 standard, which is the core
                       technology behind the development of the DVD, DBS, and the ATSC
                       DTV television format.

**Multi-Program   An MPEG-2 Transport Stream containing one or more programs or
Transport Stream**   services within a single physical channel.

N

NAVE   Nielsen Audio Video Encoder.

NTP   Network Time Protocol. A scheme used to synchronize the system
                       clock (in this case, that of the NAVE IIc) to an external source by
                       using the network interface communicating with a remote NTP server.

NUE   Nielsen Universal Encoder.

P

PAT   Program Association Table.

PES Stream   A stream containing variable-length packets of video, audio, or data. PES packets, in turn, are used to create MPEG-2 Program Streams or Transport Streams.

PID   Packet Identifier. A 13-bit field indicating the type of data stored in the payload of an MPEG-2 transport packet.

PMT   Program Map Table.

Program Content The actual program contained within a television broadcast. When encoding data to mark the Program Content, the data uniquely identifies the program itself. Typically, major networks like ABC and CBS use an Encoder to encode Program Content data to uniquely identify programs. Thus, if local affiliates actually broadcast the programs at different times, Nielsen can still identify the unique program (e.g., Tonight Show).

PSI   Program Specific Information. PSI (as defined by MPEG) is a series of tables that define the actual structure of a transport stream. These tables include the PAT (Program Association Table), PMT (Program Map Table), CAT (Conditional Access Table), and NIT (Network Information Table). The PAT and PMT are used primarily in associating particular programs (and its video, audio, and data components) with specific PIDs within the transport.

PSIP   Program and System Information Protocol for terrestrial digital television (DTV). PSIP data is delivered in 188-byte packets in the transport stream. A PSIP table delivers information about the station and about what the station is broadcasting. The NAVE IIC Encoder is primarily concerned with a TVCT PSIP table.

R

RMA   Return Material Authorization. Use this form to return the Encoder for service to WEGENER.

RTC   Real Time Clock. A battery-backed hardware component within the Encoder that keeps the time of day constant regardless of whether the Encoder unit is powered on or off.

S

SID (Source Identification)

A unique number assigned to each Encoder device that is encoded into the NAES or AMOL signal. The broadcast industry often refers to the NAES and AMOL signals as "SIDs".

SMPTE LTC

SMPTE time code or SMPTE: Society of Motion Picture and Television Engineers' system of giving each frame of video a unique number to allow indexing and precise tape control. The SMPTE signal is recorded as a modulated audio signal on an audio channel, as a dedicated address track (called Longitudinal Time Code, or LTC), or as a visible digital signal in the vertical-blanking interval above the active picture area (called Vertical Interval Time Code, or VITC). Frames are identified in an hours-minutes-seconds-frames format...08:12:37:22 for example.

STID

Used in this manual to represent "Station Identification," as in a television station's Call Letters.

T

Transport Stream

A stream of 188 byte packets that contain audio, video or data belonging to one or several programs.

TSID

Transport Stream ID. Identifies the MPEG-2 transport stream. Is associated with a broadcaster's transmission signal ID.

TVCT

Terrestrial Virtual Channel Table. This type of PSIP table describes the channels represented in the transport stream. The most important information that the NAVE IIC Encoder extracts from the TVCT table is the minor-channel/program-number correlation. The Encoder assigns SIDs based on the minor channel number, which it maps to a specific program based on information extracted from the TVCT.

V

Video PID

A PID that identifies an MPEG-2 transport packet that holds video data.

W

Watermarking

A method of inserting Nielsen NAES data into an AC-3 stream. When the Encoder watermarks a stream, it inserts the SID and time stamp into an inaudible portion of the AC stream. Also called "Nielsen Encoding".

Index