



# PAGING ENCODER SETUP V9.3 MANUAL

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## OVERVIEW & INSTALLATION

The WaveWare Paging Encoder Setup v9 is designed to interface with WaveWare’s current line of SPS5 v9 Series of paging systems. The software is designed to program your SPS5 paging system to function within your site’s communication infrastructure, and we will cover all the methods and settings that the v9 Encoder Setup Software can program into your system to help achieve that goal.

Here is our lineup of SPS5 models (*fig. 1, 2*) and our Legacy Systems (*fig. 3*) that are compatible with v9.3:

Figure 1: Current Paging System Lineup



Figure 2: Current Systems

Model No.	Serial Ports	Ethernet Sockets	Paging Transmission Power	Recommended Duty Cycle Range	Serial Config.	Web Config.
SPS5 v9E	1	2	2 or 5 Watts	30% - 70%	Y	Y
SPS5 v9S	1	0	2 or 5 Watts	30% - 70%	Y	N
SPS5 v9E-XL	1	2	5 Watts	100%	Y	Y
SPS v9E-HP	1	2	10 - 25 Watts	80%	Y	Y

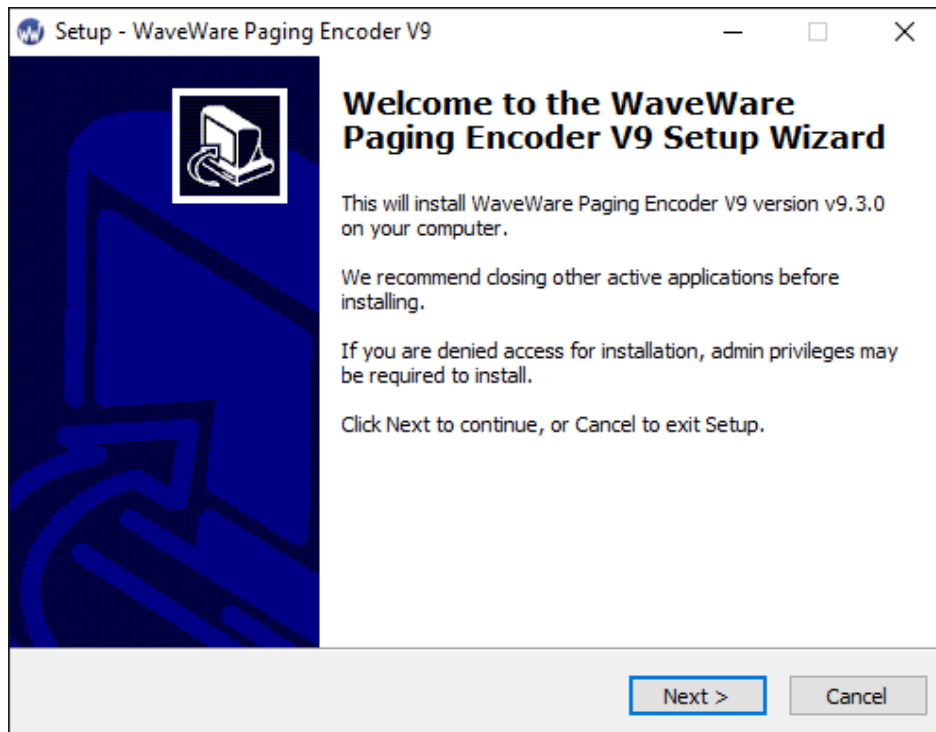
Figure 3: Compatible Legacy Systems

Model No.	Serial Ports	Ethernet Sockets	Paging Transmission Power	Recommended Duty Cycle Range	Serial Config.	Web Config.
SPS5 v9	2	0	2 or 5 Watts	30%-70%	Y	N
SPS5 v8	1	0	2 or 5 Watts	30%-70%	Y	N

## INSTALLATION

WaveWare's Paging Encoder Setup v9 Installer can be downloaded on our website at: [https://www.wirelessmessaging.com/s/V93\\_Encoder\\_Setup.exe](https://www.wirelessmessaging.com/s/V93_Encoder_Setup.exe). Depending on your PC, **you may be required to run the program as an administrator in order to install the software**. The installer (*fig 4.*) will give step-by-step instructions on where to place the software and its associated icons.

Figure 4: Software Installer



After the installation of the software is complete, when you first start up the program, you will be taken to the **MAIN WINDOW** (*fig. 5*) where the different functions and settings can be accessed. Each of these will be covered in detail in the following sections.

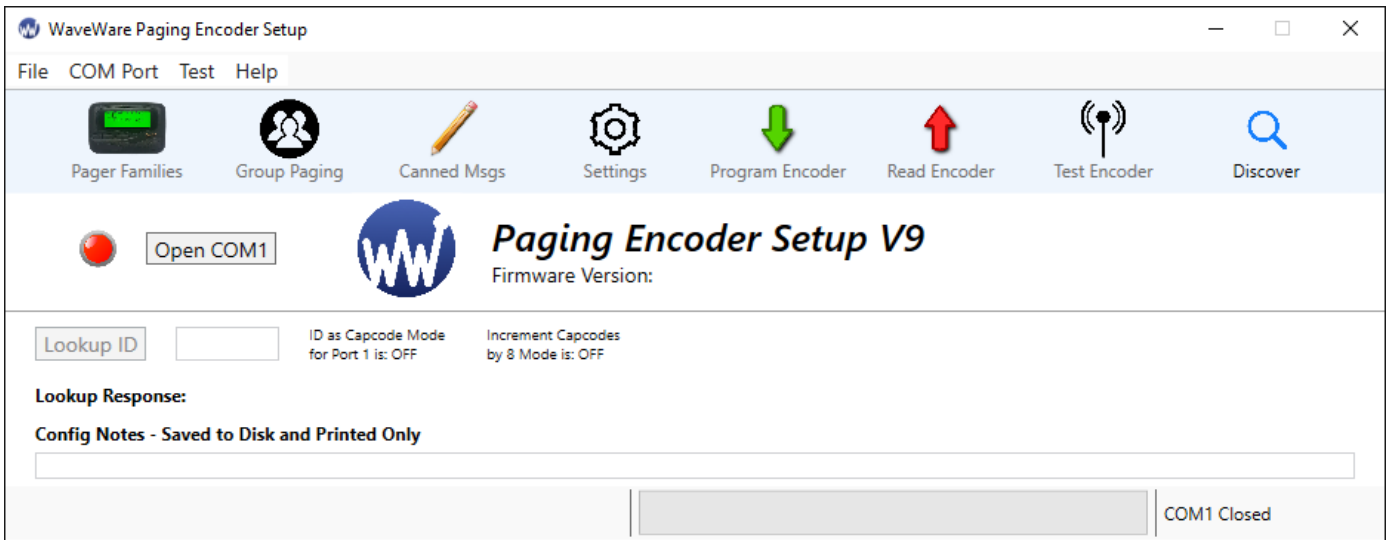
### VERSION REQUIREMENTS:

- A Windows 8/10 PC is required to use version v9.3.xx.
- If you are using a Windows OS older than Windows 8, please download and install version v9.2.11
- Old/New SPS-5 software is available at: [wirelessmessaging.com/sps5-series-encoder-programming](https://www.wirelessmessaging.com/sps5-series-encoder-programming)

## THE COM PORT

When using WaveWare's Paging Encoder Setup v9, all system communications are sent through a serial connection. Since most PCs do not have serial ports these days, **this is accomplished by using USB ports via a USB-Serial Adapter**. When you first open the program, most of the icons and menu options are disabled since no connection has been opened to a paging system (*fig. 5*). If you have any active **COM PORTS<sup>1</sup>**, a default port will be chosen as the one to open, but this doesn't mean that it's your paging system. This section details how to choose and open a connection to the **PAGING ENCODER** and the settings that affect it.

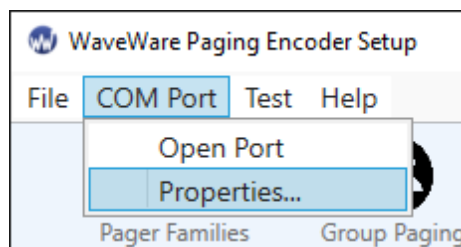
Figure 5: Closed Main Window



## COM PROPERTIES

To choose your connection and its settings, navigate to **COM PORT > PROPERTIES<sup>2</sup>** (*fig. 6*). If any COM Port settings are changed while the port is open, the software will close the port automatically.

Figure 6: COM Menu

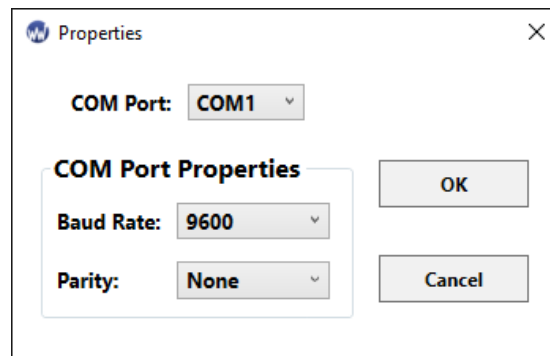


<sup>1</sup> Words with **THIS** font are defined in the glossary of terms.

<sup>2</sup> This guide uses > to denote ordering when clicking on menus from **(higher level clicked) > (lower level clicked) > (etc.)**

After opening the **COM PROPERTIES WINDOW** (fig. 7), you will see 3 separate dropdown menus that contain the settings needed to open a COM connection to your paging encoder.

Figure 7: COM Properties



- **COM PORT** – This is a list of the current serial or USB-serial connections on your PC. By default, the last COM port used will show up in the COM Port dropdown selection and will show up as the default port to open in the **MAIN WINDOW**. If it is your first time, then the first COM port used will be displayed. The best way to determine the correct port if there are multiple ports being used is to:
  1. Make sure your system is on and connected. Navigate to **COM PORT > PROPERTIES**.
  2. Look at the list and **write down or remember each active connection**.
  3. Exit **PROPERTIES** by clicking *Cancel* and **unplugging your serial connection to your paging system from the PC end**.<sup>3</sup>
  4. Open **COM PORT > PROPERTIES** again and check the COM port dropdown menu for the missing COM port connection.
  5. Exit **PROPERTIES** again and re-plug your serial connection back into the PC.
  6. Open **COM PORT > PROPERTIES** again and chose the COM port that was missing before.
- **BAUD RATE** – This is a list of valid serial port transmission rates. Your paging system is listening for a specific rate to receive data from. *Most systems come with a 9600 baud rate*, and it's the default option on your first use.
- **PARITY** – These are compatible data binary formats sent through the serial connection. If the parity is incorrect, the data will not be read correctly. *Most paging systems come with the parity None* as the default.<sup>4</sup>

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<sup>3</sup> This makes sure your PC doesn't see a USB-Serial converter as a connection even though it isn't plugged into anything.

<sup>4</sup> Data and Stop bits exist but are unmodifiable. The full data format setups are: **None, 8, 1 / Even, 7, 1 / Odd, 7, 1**.

## OPENING THE PORT

After confirming your serial connection settings, you are ready to open the COM port and put the paging system into programming mode. Press the **OPEN COM** button to start the process. After a couple of seconds, you should see a confirmation of the paging system being detected (*fig. 8*) and is ready to be read. After acknowledging this, the software will read the **DATABASE CONFIGURATION** programmed into it, and the software will activate all the menus and functions after the read is completed (*fig. 9*). If the software has trouble detecting your paging system: **make sure the paging system has power, the serial cable is plugged in on both ends, the correct COM port is chosen, and the serial settings match what the system was shipped with.**

Figure 8: Opening the Port

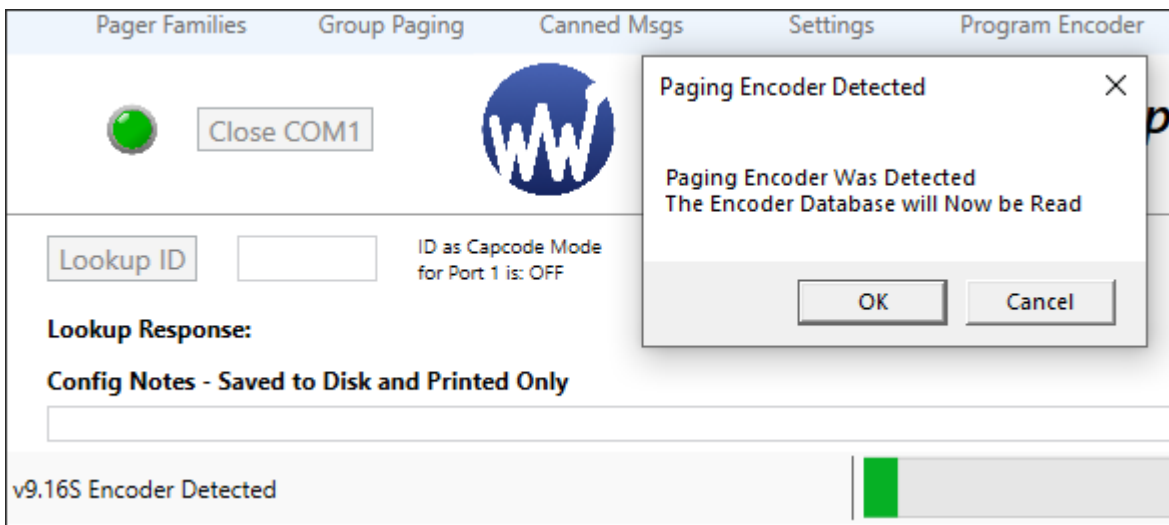


Figure 9: Open Main Menu

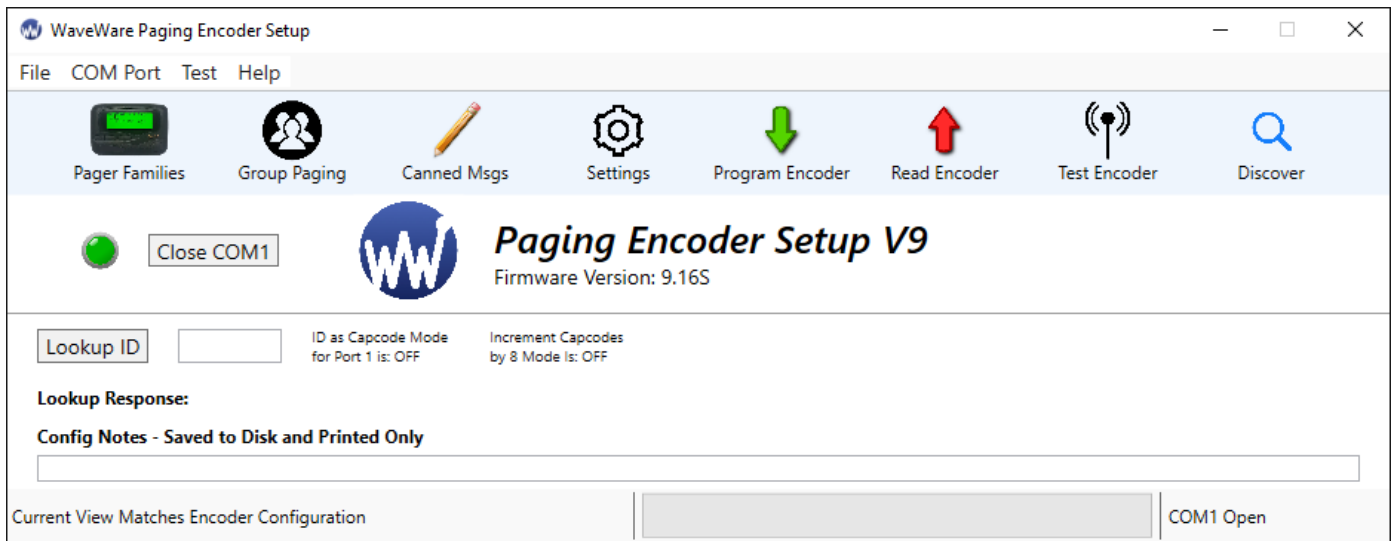
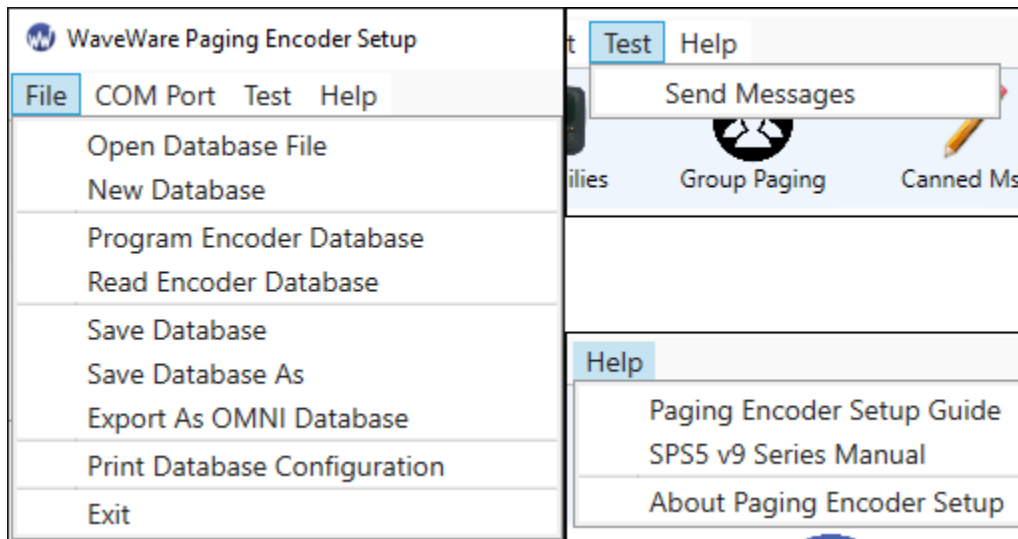


Figure 10: Main Menu Options

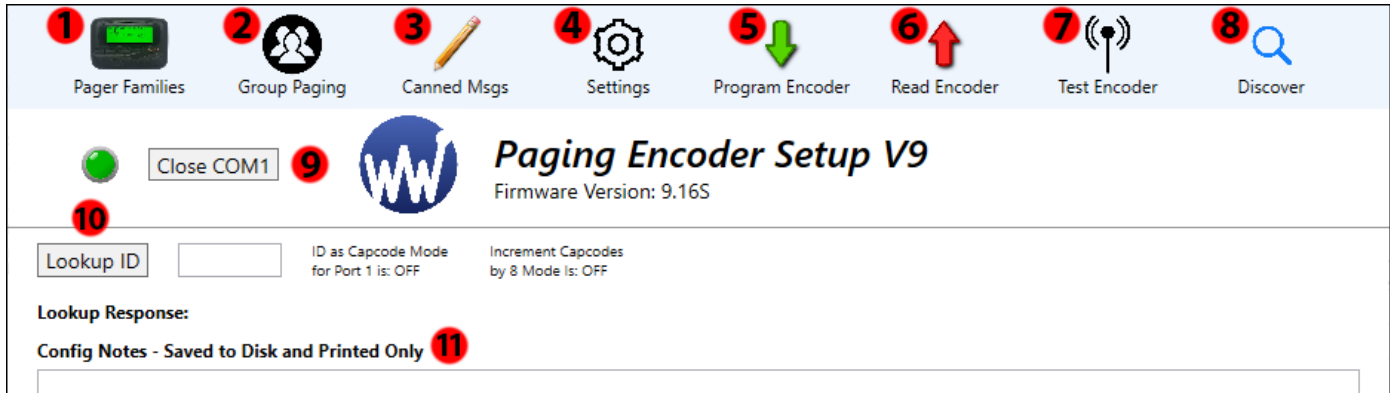


- **OPEN DATABASE FILE** – Loads a saved database configuration, replacing the current one.
- **NEW DATABASE** – Clears the current database configuration.
- **PROGRAM ENCODER DATABASE** – Programs the current database to the paging encoder.
- **READ ENCODER DATABASE** – Reads the paging encoder database, replacing the current one.
- **SAVE DATABASE** – Saves an already defined database configuration.
- **SAVE DATABASE AS** – Defines the database configuration file and saves it.
- **EXPORT AS OMNI DATABASE** – Save the current database as an OMNI Messaging Server database.
- **PRINT DATABASE CONFIGURATION** – Print the current database configuration.
- **EXIT** – Exits the software. This will automatically close any open port.
- **SEND MESSAGES** – Opens the **TEST ENCODER** window.
- **PAGING ENCODER SETUP GUIDE** – Opens this guide.
- **SPS5 V9 SERIES MANUAL** – Opens the manual for the SPS5 v9 series of paging systems.
- **ABOUT PAGING ENCODER SETUP** – Shows the splash screen (*fig. 1*).

## FUNCTIONS

This section will cover the main functions of the Paging Encoder Setup V9 Software (*fig. 11*).

Figure 11: Main Functions



1. **PAGER FAMILIES** – Sets the range of ID's, capcodes, and pager settings that the encoder will use.
2. **GROUP PAGING** – Creates a common ID that will page up to 15 defined pagers in a row.
3. **CANNED MSGS** – Sets predefined messages for use as prefixes, suffixes, and timed messages.
4. **SETTINGS** – Sets the configuration of the paging encoder.
5. **PROGRAM ENCODER** – Programs the current database to the paging encoder.
6. **READ ENCODER** – Reads the paging encoder database, replacing the current one.
7. **TEST ENCODER** – Allows the user to test out encoder configuration with manual pages.
8. **DISCOVER** – Detects WaveWare devices on the primary network connected to this PC.
9. **OPEN/CLOSE PORT** – Opens/Closes the line of communication between the PC and the encoder.
10. **LOOKUP ID** – Checks to see if a pager ID exists in a Pager Family and what capcode it represents.
11. **CONFIG NOTES** – Allows the user to write notes about the configuration when it's saved to a **DATABASE FILE** or printed along with said database. **This does not get programmed to the encoder.**



Figure 12: Pager Families Window

50	Active	Pager Qty	Start ID	End ID	Start Capcode	End Capcode	Pager Type	Func Code	Data Rate	Prefix Msg	Suffix Msg
1	ON	101	100	200	0000100	0000200	Alpha	4	512	None	None
2	OFF										
3	OFF										
4	OFF										
5	OFF										
6	OFF										
7	OFF										
8	OFF										
9	OFF										
10	OFF										
11	OFF										
12	OFF										
13	OFF										
14	OFF										
15	OFF										
16	OFF										
17	OFF										
18	OFF										
19	OFF										
20	OFF										
21	OFF										

Increment Capcodes by 8 Mode is OFF

Return Clear Row

The **PAGER FAMILIES** window (*fig. 12*) displays the current database’s list of valid pager IDs, capcodes, and messaging formats used for transmitting pages, and **each row in the window is a separate Pager Family entry**. There are several encoder settings and paging protocols that manipulate how each Family is interpreted, but these will be detailed in their respective sections. Each encoder can have up to 50 different Pager Family entries on a single database configuration, but conflicts with Paging Group entries can happen if you are not careful. For its part, Pager Families usually detects these conflicts and will notify you of the offending conflict (*fig. 13*). The next page has a list of all the different parts of a Pager Family entry (*fig. 14*) and a description of what each item does.

Figure 13: Family/Group Conflict

Pager Families											
50	Active	Pager Qty	Start ID	End ID	Start Capcode	End Capcode	Pager Type	Func Code	Data Rate	Prefix Msg	Suffix Msg
1	ON	101	450	550	0000100	0000200	Alpha	4	512	None	None
2	OFF										
3	OFF										
4	OFF										
5	OFF										
6	OFF										
7	OFF										
8	OFF										

**Bad ID Range**

Family Row #1 has an ID Range that contains Group ID: 0500  
Please select a different ID Range.

Figure 14: Pager Family Row

Pager Families											
50	Active	Pager Qty	Start ID	End ID	Start Capcode	End Capcode	Pager Type	Func Code	Data Rate	Prefix Msg	Suffix Msg
1	ON	101	100	200	0000100	0000200	Alpha	4	512	None	None

1. **ACTIVE** – Controls if a Pager Family is checked when paging data is received from a *HOST DEVICE*.
2. **PAGER QTY** – Sets the range of ID and capcode pairings. It can be set from *1-999*.
3. **START ID** – Sets the first ID used in order to calculate the range. Valid IDs range from *1-9999*.
4. **END ID** – An unmodifiable display of the last calculated ID in the range.
5. **START CAPCODE** – Sets the first capcode used in order to calculate the range. Valid capcodes range from *0000008-2097143* with exceptions for **2007664-2007671** and **2045056-2045063**.
6. **END CAPCODE** – An unmodifiable display of the last calculated capcode in the range.
7. **PAGER TYPE** – Changes the message type pagers receive from this Pager Family. Choices are: **ALPHA** and **NUMERIC**. **If you are using a tone pager, use the numeric setting.**
8. **FUNCTION CODE** – Sets the function code used by a pager when it receives a page from this Pager Family. Some pagers refer to function codes as letters. In this case: *1=A, 2=B, 3=C, and 4=D*.
9. **DATA RATE** – Sets the transmission rate in this Pager Family. Choices are: *512, 1200, and 2400*.
10. **PREFIX MSG** – Adds a prepended message from **CANNED MSGS** to pages from this Pager Family.
11. **SUFFIX MSG** – Adds an appended message from **CANNED MSGS** to pages from this Pager Family.

Figure 15: Group Paging Window

Group Paging										
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
Reference										
Active	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Group ID	0500									
Pager ID 1	0101									
Pager ID 2	0102									
Pager ID 3	0103									
Pager ID 4										
Pager ID 5										
Pager ID 6										
Pager ID 7										
Pager ID 8										
Pager ID 9										
Pager ID 10										
Pager ID 11										
Pager ID 12										
Pager ID 13										
Pager ID 14										
Pager ID 15										
Timer Active	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Timer Msg #										

Return
Clear Column

The **GROUP PAGING WINDOW** (*fig. 15*) displays the current database’s pager IDs bound together by a common group ID. This is used for a common ID and or a timed message to reach multiple pagers at once, and **each column represents a different grouping**. There are several encoder settings and paging protocols that manipulate how Pager Groups are interpreted, but these will be detailed in their respective sections. Each encoder can have up to 10 different Pager Group entries in a single database configuration, but conflicts with Pager Family entries can happen if you are not careful. For its part, the Group Paging window usually detects these conflicts and will notify you of the offending conflict (*fig. 16*). The next page has a list of all the different parts of a Group Paging entry (*fig. 17*) and a description of what each item does.

Figure 16: Group Conflict


Group Paging						
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Reference						
Active	ON	OFF	OFF	OFF	OFF	OFF
Group ID	0100					
Pager ID 1	<div style="border: 1px solid black; padding: 5px;"> <p>Bad Group ID</p> <p> The Group ID: 0100 is used by a Pager Family. Please select a different Group ID.</p> <p style="text-align: right;">OK</p> </div>					
Pager ID 2						
Pager ID 3						
Pager ID 4						
Pager ID 5						
Pager ID 6						
Pager ID 7						

Figure 17: Group Column

Group Paging		
	Group 1	Group 2
Reference		1
Active	ON	2
Group ID	0500	3
Pager ID 1	0101	4
Pager ID 2	0102	
Pager ID 3	0103	
Pager ID 4		
Pager ID 5		
Pager ID 6		
Pager ID 7		
Pager ID 8		
Pager ID 9		
Pager ID 10		
Pager ID 11		
Pager ID 12		
Pager ID 13		
Pager ID 14		
Pager ID 15		
Timer Active	OFF	5
Timer Msg #		6

1. **REFERENCE** – A small tag to identify what the group is for. It's saved to the database file and printed with the database configuration. **This is not saved to the encoder when programming to it.**
2. **ACTIVE** – Controls if the group is checked when paging data is received from the Host Device.
3. **GROUP ID** – The ID that triggers a group page. **It must be an ID not used in any Pager Family.**
4. **PAGER IDs** – A list of up to 15 Pager IDs in the paging group. **It must be an ID in a Pager Family.**
5. **TIMER ACTIVE** - This will send a page **every 2 minutes** to the pagers listed in that Group unless the Host Device issues a **RESET COMMAND**.
6. **TIMER MSG #** - The message, **defined in Canned Msgs**, which will page out to the associated Paging Group when the timer is active and 2 minutes have passed.

Figure 18: Canned Msgs. Window

#	Message
1	Hey
2	Listen!
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

OK

The **CANNED MSGS. WINDOW** (fig. 18) is very simple with only text prompts for up to 15 messages programmed to the encoder **for use as a prefix, a suffix, or as a timed message**. The messages will save if the **CLOSE** button is used instead of the **OK** button.

THE MAX LENGTH OF A CANNED MSG. IS:

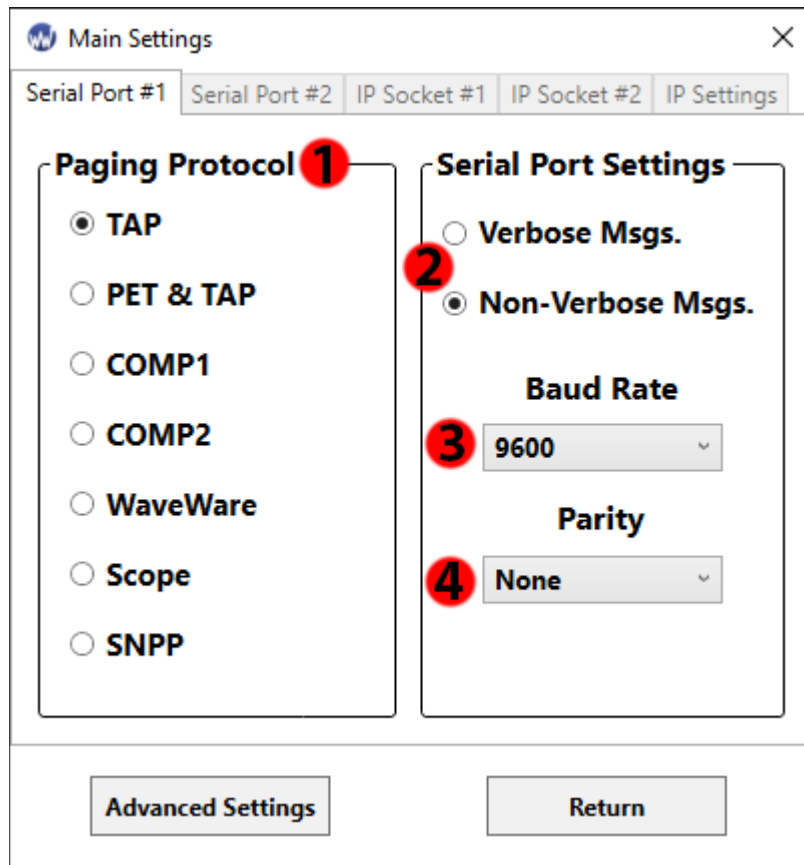
***The max length of a page<sup>5</sup> – the length of the page the Canned Msg. is applied to.***

<sup>5</sup> 240 characters normally; 500 characters if Scope or WaveWare protocol is used.

The **SETTINGS WINDOW** (fig. 19) is the central hub for Encoder configuration. It's set up with separate tabs for each input that the SPS5 paging systems are capable of, but, if a paging system does not include certain inputs, they will be disabled and greyed-out<sup>6</sup>. If you want a more detailed explanation of the different paging protocols, please consult the SPS5 V9 Paging System Manual.

SERIAL SETTINGS

Figure 19: Settings Window Serial



1. **PAGING PROTOCOL** – Determines the data format the Encoder is looking for when the Host Device sends paging data. It eventually gets converted to **POCSAG** when it reaches the **TRANSMITTER**.
2. **[NON-]/VERBOSE MSGS.** – Controls the amount of data a paging system sends in reply to host device requests and paging messages.
3. **BAUD RATE** – Controls the transmission rate the input is looking for from a host device. (see pg. 5)
4. **PARITY** – Controls the byte format the input is looking for from a host device. (see pg. 5)

<sup>6</sup> Figure 19 shows what a SPS5 v9S looks like with the second serial port and the IP settings disabled.

Figure 20: IP Socket Settings

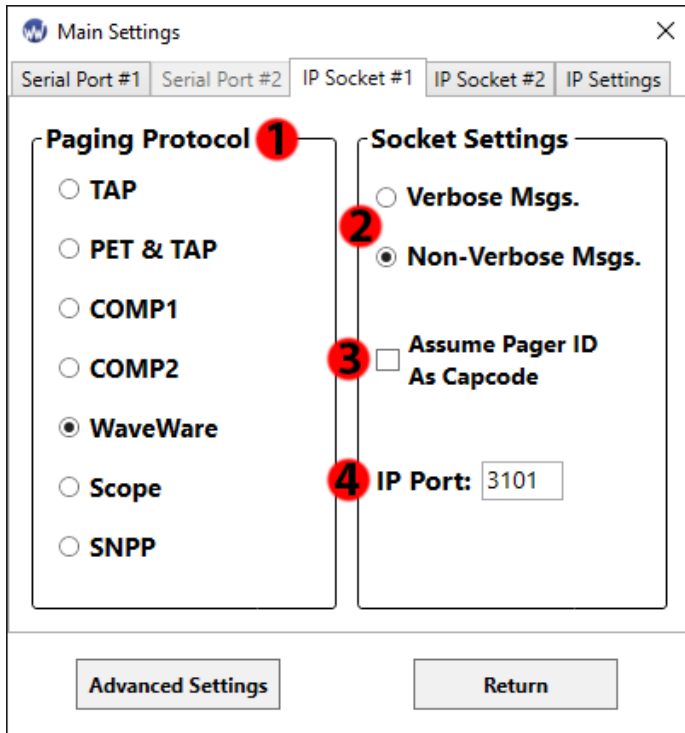
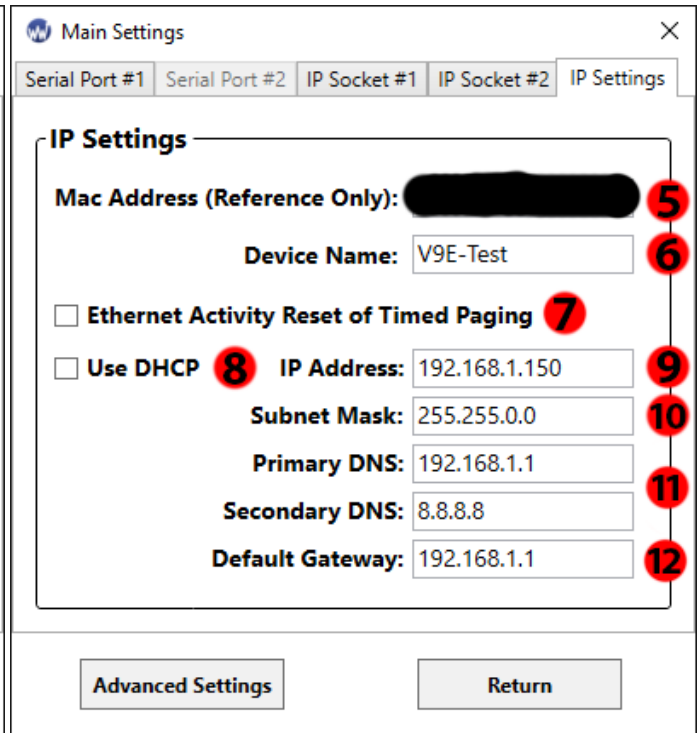


Figure 21: IP Network Settings



1. **PAGING PROTOCOL** – Determines the data format the encoder is looking for when the host device sends paging data. It eventually gets converted to POCSAG when it reaches the transmitter.
2. **[NON-]/VERBOSE MSGS.** – Controls the amount of data sent from the Paging Encoder in reply to host device requests and paging messages.
3. **ASSUME PAGER ID AS CAPCODE** – This effectively negates the **PAGER FAMILIES** database and the **GROUP PAGING** database. Instead, **the encoder looks for capcodes instead of translating IDs.** However, **the first pager family is checked for the data rate, pager type, and function code.**
4. **IP PORT** – The port a paging system looks at when searching for data from a host device.
5. **MAC ADDRESS** – The address of the Network Interface Card in the paging system. It is only used to help identify the system on the network and cannot be modified.
6. **DEVICE NAME** – The name that appears in the Discover and Reset Tool and on the network.
7. **ETHERNET ACTIVITY RESET OF TIMED PAGING** – Sets whether a reset command in an **ETHERNET SOCKET** communication resets the timer in a timed group message. (*see pg. 12*)

8. **USE DHCP** – Controls if the network assigns the IP address and network configuration or if those values are entered manually. If DHCP is used, all of the network configuration will be greyed-out.
9. **IP ADDRESS** – The network address of the paging system.
10. **SUBNET MASK** – Sets how your network is sub-divided.
11. **PRIMARY/SECONDARY DNS** – Sets the 2 IPs of Domain Name Servers used by your network.
12. **DEFAULT GATEWAY** – The IP address connecting your paging system’s Local Area Network to other networks.

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*ADVANCED SETTINGS*

Figure 22: Advanced Settings

The screenshot shows the 'Advanced Settings' window with the following elements:

- Carrier Detect Polarity:** A dropdown menu set to '0 Volts' (labeled 1).
- Data Polarity:** A dropdown menu set to 'Normal' (labeled 2).
- Transmitter Duty Cycle %:** A text input field containing '66' (labeled 3).
- Messages Per Batch (Max 32):** A text input field containing '10' (labeled 4).
- Carrier Signal Detection:** A checked checkbox (labeled 5).
- Increment Capcodes By 8:** An unchecked checkbox (labeled 6).
- Paging Site License Call Sign:** A text input field containing 'EXMP123' (labeled 7).
- Settings for 1st Serial Port:**
  - Serial Port Reset of Timed Paging: Unchecked checkbox (labeled 8).
  - Assume Pager ID as Capcode: Unchecked checkbox (labeled 9).
  - Discard <LF> Chars in COMP1: Unchecked checkbox (labeled 10).
  - Discard Blank Msgs in COMP1: Unchecked checkbox (labeled 11).
  - Flow Control: A dropdown menu set to 'None' (labeled 12).
- Settings for 2nd Serial Port:**
  - Serial Port Reset of Timed Paging: Unchecked checkbox.
  - Assume Pager ID as Capcode: Unchecked checkbox.
  - Discard <LF> Chars in COMP1: Unchecked checkbox.
  - Discard Blank Msgs in COMP1: Unchecked checkbox.
  - Flow Control: A dropdown menu set to 'Hardware - (RTS/CTS)'.
- Buttons:** 'Reset to Defaults' (labeled 13) and 'Return'.



1. **CARRIER DETECT POLARITY** – a compatibility setting for the detection of carrier signals. Some **RECEIVERS** output 5V upon carrier detection, while others drop to 0V. **The default is 0 Volts.**
2. **DATA POLARITY** – allows paging messages to be encoded with one of two polarities. Many pager models are programmable to have normal or inverted data decoding. **The default is Normal.**
3. **TRANSMITTER DUTY CYCLE** – Controls the amount of time the radio is active in a cycle. The higher the setting, the shorter the lifespan, but it speeds up sending multiple pages. **The default is 66%.**
4. **MESSAGES PER BATCH** – Controls how many messages are sent by the transmitter in a single cycle. It can be set from 1 to 32. **The default is 10.**
5. **CARRIER SIGNAL DETECTION** – Controls if the paging system will check for carrier signals. If this is turned off, messages will be sent even if a **CARRIER SIGNAL** exists, possibly causing interference. **It's active by default.**
6. **INCREMENT CAPCODES BY 8** – Changes whether the capcodes number sequentially or by 8 for each ID in **PAGER FAMILIES**. **The default is off.**
7. **PAGING SITE LICENSE CALL SIGN** – This is the call-sign issued by WaveWare<sup>7</sup> for your paging system so the FCC knows it is a valid paging site. It should be automatically programmed in if you purchase your license through WaveWare.
8. **SERIAL PORT RESET OF TIMED PAGING** – Controls if a reset command serial transmission resets the timer in a timed group message. (*see pg. 12*)
9. **ASSUME PAGER ID AS CAPCODE** – This effectively negates the **PAGER FAMILIES** database and the **GROUP PAGING** database. Instead, **the encoder looks for capcodes instead of translating IDs.** However, **the first pager family is checked for data rate, pager type, and function code.**
10. **DISCARD <LF> CHARS IN COMP1** – Removes all Line Feed characters from any COMP1 message. **This is turned off by default.**
11. **DISCARD BLANK MSGS IN COMP1** – Prevents COMP1 messages with no characters from being sent to the transmitter. **This is turned off by default.**
12. **FLOW CONTROL** – Controls the behavior of the encoder when it is responding to host device requests and messages. Refer to the SPS5 v9 Series Manual for an in-depth breakdown. **The default Flow Control is Hardware.**
13. **RESET TO DEFAULTS** – Wipes the current database and resets it to default values.

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<sup>7</sup> It depends whether you purchase your FCC License through us or through other means.

## TEST ENCODER & RANGE TEST

The **TEST ENCODER** window (*fig. 23*) allows the testing of different database configurations without having to use another program. When you select the Test Encoder function in the **MAIN WINDOW**, the paging system will be taken out of programming mode, which takes a few seconds. Conversely, when exiting Test Encoder, the paging system is placed back into programming mode again. Inside the Test Encoder window, there is a menu selection **START RANGE TEST** which will take you to the **RANGE TEST** window (*fig. 24*). This window allows you to repeatedly send messages to a specific Pager ID allowing the user to find how far the paging system reaches.

### TEST ENCODER

Figure 23: Test Encoder Window

The screenshot shows the 'Test Encoder' window with the following elements and callouts:

- 1**: Pager ID input field containing '102'.
- 2**: Function Code radio buttons (A, B, C, D), with 'D' selected.
- 3**: RF Data Rate radio buttons (512, 1200, 2400), with '512' selected.
- 4**: Send button.
- 5**: Pager Message input field containing 'This is a test'.
- 6**: Saved Messages list containing 'Hey Listen!'.
- 7**: COM Port Log text area.
- 8**: Log to File checkbox.

Additional window details: Title bar 'Test Encoder', menu bar 'Exit Start Range Test', and status 'ID as Capcode Mode for Port 1 is: OFF'.

1. **PAGER ID/CAPCODE** – Enter an ID that's in **PAGER FAMILIES**, or a capcode if *ID as Capcode* is turned on.<sup>8</sup> If capcodes are used, the first Family sets the *Data Rate*, *Pager Type*, and *Function Code*.

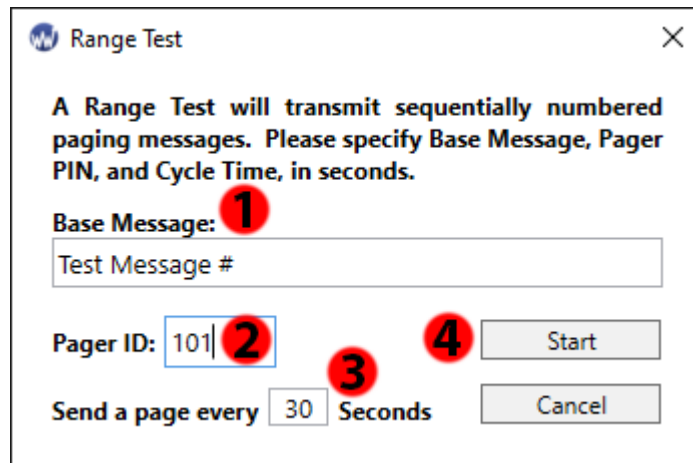
<sup>8</sup> Scope and WaveWare paging protocols already use capcodes instead of IDs.

2. **FUNCTION CODE** – Sets the function code manually. Only used with Scope protocol testing.
3. **RF DATA RATE** – Sets the data rate manually. Used with Scope and WaveWare protocol testing.
4. **SEND** – Pushes a single page to the radio transmitter using the parameters set in Test Encoder.
5. **PAGER MESSAGE** – A textbox where any valid paging message can be written. You can also type out any messages you want to save.
6. **SAVED MESSAGES** – A repository of messages saved to disk. Best used for **OTA COMMANDS**. The **ADD**, **REPLACE**, and **DELETE** buttons allow users to easily change the repository.
7. **COM PORT LOG** – Shows easily readable serial responses from the paging system.
8. **LOG TO FILE** – Toggles whether any Test Encoder or Range Test activity is logged.

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## RANGE TEST

Figure 24: Range Test Window



1. **BASE MESSAGE** – The message you want to send during the range test. The message number is appended to the end of the base message.
2. **PAGER ID/CAPCODE** – Enter a valid ID that exists in **PAGER FAMILIES**, or any capcode if *ID as Capcode* is turned on. If *ID as Capcode* is used, the first Pager Family sets the *Data Rate*, *Pager Type*, and *Function Code*.
3. **REPEAT TIMER** – Set the amount of time between pages. A countdown is shown in the **WINDOW TITLE**.
4. **START/CANCEL** – Starts/Exits **RANGE TEST**. You can press *Start* during a range test to update the pager ID and base message. This causes the message number to reset.

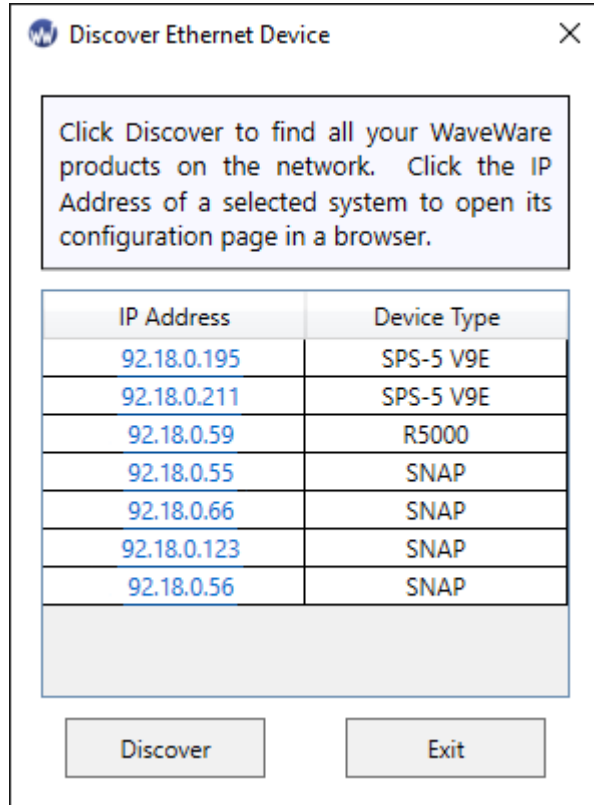
## DISCOVER

The **DISCOVER WINDOW** (fig. 25) is a fairly simple function that allows you to find WaveWare devices on your network. This is usually your Ethernet connection if you also have a Wifi connection. If your PC is connected to multiple networks, **you may have to disconnect from networks that don't have the WaveWare device that you want to configure**. However, if your WaveWare device is on your primary network, there should be no issue.

Figure 25: Discover Window: OFF



Figure 26: Discover Window: ON



When you click the **DISCOVER** button, a list will populate containing all the IP addresses and types of WaveWare products on your network (fig. 26). If you have multiple devices of the same type and cannot identify the right one, you can use the standalone **WAVEWARE DISCOVER AND RESET TOOL** which also lists the *Device Name*. When you click on one of the IP Address links, your default web browser will open a new window<sup>9</sup> to the configuration page of the selected device. You can also get to the web configuration page by opening your web browser and entering the IP address into the address bar. **A walkthrough of the web configuration for SPS5 v9E paging systems is available in the V9 Series Paging System Manual.**

<sup>9</sup> If your browser is already open, it will create a new tab instead.

- **CARRIER SIGNAL** – A radio frequency transmission designed to send data. If a carrier signal within the same bandwidth of your paging system is present, the paging system will hold all messages until the signal is gone.
- **COM PORT** – A serial interface connection facilitated by a serial cable, a USB-Serial Adapter, or even Bluetooth in some situations. These connections are one-way meaning that data can be sent or received, but they have to take turns who gets to send at any given point.
- **DATABASE CONFIGURATION** – The collection of all the different settings' values displayed in the software and programmed into a single encoder.
- **DATABASE FILE** – Database configurations that have been saved to a PC with possibly some reference notes that are not an actual part of the database configuration.
- **ETHERNET SOCKET** – A single, virtual connection to a device through an Ethernet cable. Each device can only have so many connections to it at once in a single Ethernet port. The SPS5 v9E systems can have up to two connections at once.
- **HOST DEVICE** – The device sending data to the paging system during normal operation. These can be anything from PCs, to nurse call machines, to messaging servers, and etc.
- **OTA (OVER THE AIR) COMMANDS** – These are paging messages designed to change settings on paging receivers remotely without having the need to take the device offline.
- **PAGING ENCODER** – This is the physical board that holds the SPS5 firmware, the programmed database configuration, the inputs that allow connections to it, and an output to the transmitter.
- **POCSAG (POST OFFICE CODE STANDARDISATION ADVISORY GROUP)** – This is the protocol that all paging protocols change to when they are getting prepared to be transmitted. As long as the paging protocol your host device uses is compatible with the paging system, it will convert that paging protocol to POCSAG when it is sent to the transmitter.
- **RECEIVER** – Any device capable of interpreting the POCSAG data sent by a paging system.
- **RESET COMMAND** – When *Serial or Ethernet Activity Reset of Timed Paging* is active, 2 types of messages can cause the timer to reset: **A valid & processed page request and an ATI<CR> command.**
- **TRANSMITTER** – A Radio Frequency Signal Generator attached to the paging system encoder that does the actual sending of a paging transmission. This is usually what breaks in a system first due to heavy use.