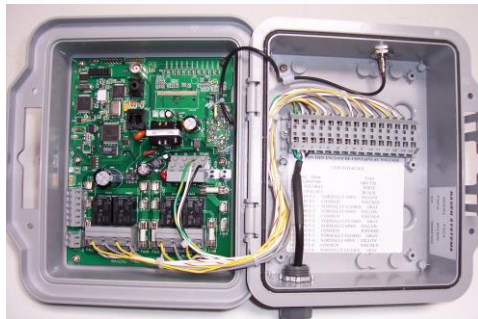


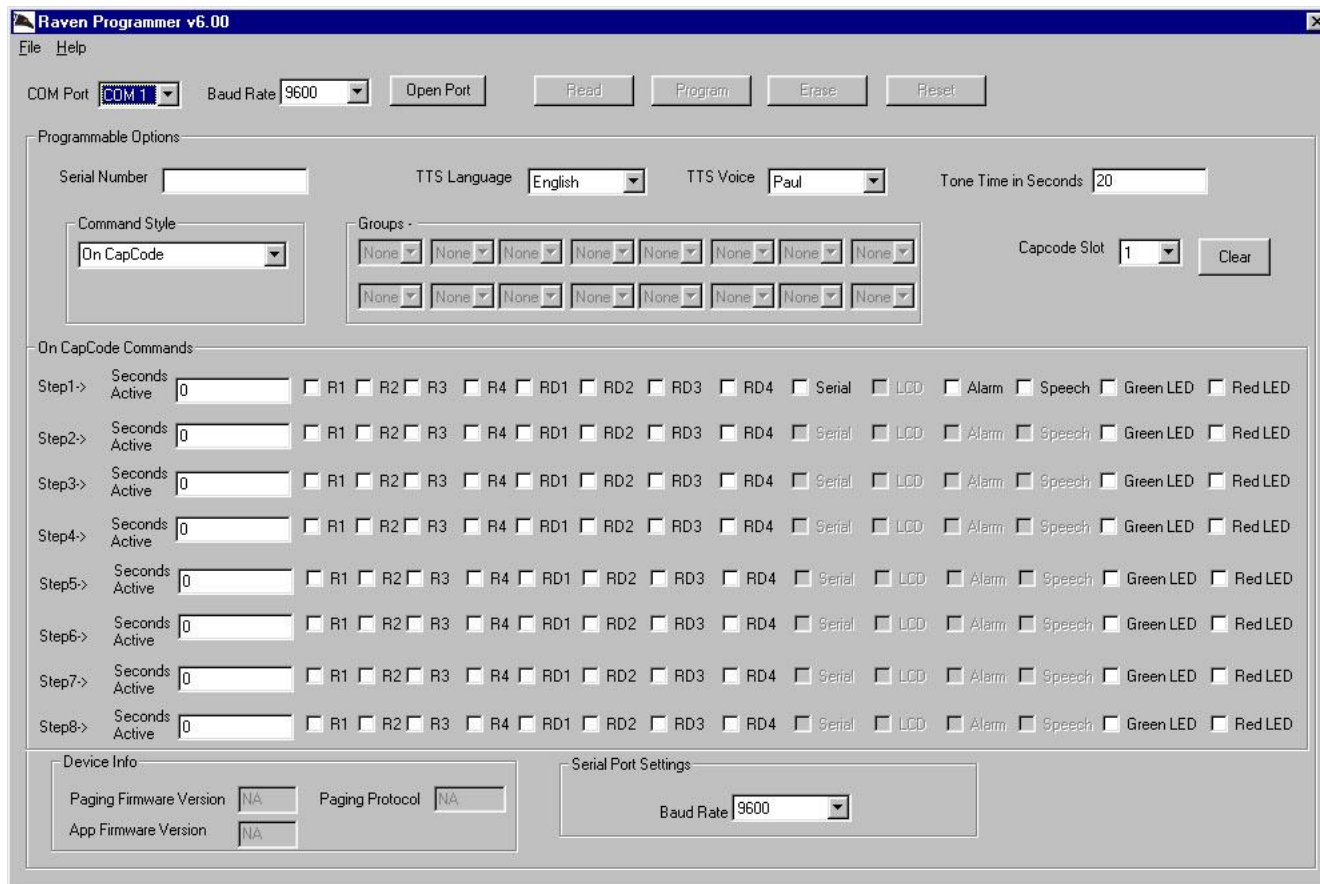


## **RAVEN™ Products Programmer User Guide**



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The RAVEN™ Product Programmer is a software tool to allow technical personal to configure the RAVEN™ family of products. For ease of description, the RAVEN™ family products will be referred to in this guide as “the RAVEN”.



## Definition of Button Function/Settings

**Please note that all non-applicable program boxes will be grayed out.**

<b>File</b>	Open	Open an existing configuration file
	Save	Save a configuration with a unique file name
<b>Help</b>	About	About this program
<b>COM Port</b>	COM 1 to COM 4 Selects serial port for communication	
<b>Baud Rate</b>	1200 to 115200	
<b>Open Port</b>	Open serial port using selected settings for communication	
<b>Read</b>	Read programmable settings of device connected to serial port	
<b>Program</b>	Store programmable settings into the RAVEN connected to serial port	
<b>Erase</b>	Erase settings stored in the RAVEN connected to serial port	
<b>Reset</b>	Reset the RAVEN connected to serial port	

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## Programmable Options

<b>Serial Number</b>	the RAVEN serial number		
<b>TTS Language</b>	English, Castilian Spanish, Latin Spanish		
<b>TTS Voice</b>	Paul, Harry, Betty, Ursula, Dennis, Kit, Frank, Rita, Wendy (variations in voices)		
<b>Active Capcode Slots</b>	1 to 16	enable/disable	pre-assigned Capcodes
<b>Tone Time (In Seconds)</b>	1 to 16777715		
<b>Command Styl voice)</b>	Pager Only	Sounds alarm, displays message and blinks LED (no	
	On CapCode	see On CapCode Commands below	
	Pager Only		
	Raven Cmd Set	see Raven Command Set below	
<b>Groups</b>	None, 1 to 999	active for Raven Cmd Set, active for all 16 Groups	
<b>Capcode Slot</b>	1 to 16	active for On CapCode	
<b>Clear</b>	Clears all below On CapCode Commands settings		

## On CapCode Commands

<b>On CapCode only</b>	Eight possible setup steps.		
<b>Setp1 through 8</b>	The RAVEN will step though each step until a zero "Seconds Active" is detected.		
<b>Seconds Active</b>	Activation Time in Seconds for Relays and LEDs	1 to 16777715	
<b>R1 through R4</b>	Activate Relay R1 through R4 for above Activation Time setting		
<b>Serial</b>	Enable Serial Out COM Port		
<b>Alarm</b>	Activate Tone Time in Seconds to selected value		
<b>Speech</b>	Activate Text to Voice. Text was sent via the page		
<b>Green LED</b>	Activate Green LED		
<b>Red LED</b>	Activate Red LED. (Yellow is obtainable by selecting both Green and Red LEDs)		
<b>Serial Port Settings</b>	Baud Rate	1200 to 115200	
	The RAVEN will process the paging message for output to the serial COM port.		

## Basic Raven Command Set

The command structure is defined as below:

CCCCSSSTTTGGG[text]

where:

CCCC = command (alpha)  
 SSS = message ID  
 TTT = timeout for alert  
 GGG = group code

After the 13 alpha characters, there will be alphanumeric text of variable length. We want to put the command up front, and fix the length so that we can tell where the command ends and the text starts.

### **Command character**

The command characters comprises a hexadecimal code determining which of the outputs will be activated or not activated, and a code for the various special functions resident in the RAVEN. There are fourteen (14) outputs. They are:

- a. Outputs 1-8
- b. Green LED
- c. Red LED
- d. LCD
- e. Annunciator
- f. TTS
- g. Serial

These outputs map to a bit position in the command as shown below:

Bit position	Output Affected
B0 (LSB)	Output 1
B1	Output 2
B2	Output 3
B3	Output 4
B4	Output 5
B5	Output 6
B6	Output 7
B7	Output 8
B8	Green LED
B9	Red LED
B10	LCD (not implemented)
B11	Annunciator (audio alarm)
B12	TTS (voice)
B13	Serial Output to External Device

The user chooses to enable an output by placing a binary 1 in the appropriate bit position. The user chooses to disable an output by placing a binary 0 in the appropriate bit position. For instance, if the user wants to turn on output 1, enable the red LED, LCD, Annunciator, and TTS, and disable all the others, the 14 bits would be:

0001 1110 0000 0001

which equates to a 1E01 in hexadecimal.

The MSB of the command will be a binary 1 for special commands, defined below, and a binary 0 for alerting commands.

### **Message ID**

The message ID is used to delineate one alert from another. Generally, the alert will be sent twice from the activation software to assure that the RAVEN in the field receives at least one good page. The activation software will assign a two-digit message ID to the alert message, then either an "A" or "B" signifying either the first or second transmission. Some paging carriers will discard duplicate messages if sent within a certain time period. Using this method will allow the activation software to send duplicate messages but fool the paging carriers. If the RAVEN sees that the message ID is different than the last message ID received, the RAVEN will alert. If the two message IDs are the same, then it is the same alert, and the RAVEN will not re-alert.

### **Alert Timeout**

Time, as used here, means the amount of time that the alert is active in a device. After the time period defined by this field has expired, the RAVEN will go back to its normal clock mode.

Time is also coded to conserve space. The first time digit determines granularity, and is defined as:

- a. T1 = 0 means permanent
- b. T1 = 1 means seconds
- c. T1 = 2 means minutes
- d. T1 = 3 means hours

T2 and T3 give the RAVEN of ticks based on the granularity defined. For instance T1T2T3 = 110 means 10 seconds, 301 means 1 hour.

### **Group Codes**

As explained above, we have three digits for group codes. We have defined that the RAVEN can be a member of up to 16 different groups. The default group code shall be "NONE" – the user must explicitly program any and all group codes to which the RAVEN must respond. In the past, unused group code "buckets" were programmed for a group code of "000", which meant that unless the user programmed every group code bucket, all the RAVEN on that capcode would respond to the "000" (an all-call). Using that methodology, there was always a potential of activating the RAVEN when the user didn't want to.

### **Duplicate Pages**

The firmware shall ignore a second and subsequent page when it is identical to the last valid page when the first two digits of the message ID fields of the two pages are identical. A time-out period will be defined when programming the RAVEN, i.e., if a duplicate page is seen within X seconds, it will be ignored. The "X" will be programmed at the factory.

## Command validation

Commands shall be ignored under the following circumstances:

- a. An invalid page or Ethernet transfer has been detected.
- b. The command has either too few or too many characters in the command field.
- c. A field in the command doesn't make sense (i.e., output number is invalid, time is invalid, etc.).

## Pushbutton operation

The pushbutton will function as in the "Raven Software Specification"

## Special Commands

There are several special commands, the format of which fall outside of the command structure defined above. Special commands are delineated by setting B15 (MSB) of the CCCC command characters. They are defined in the table below, and explained in the following paragraphs.

Command Characters	Command Definition
8001	Enable Capcode (not implemented)
8002	Disable Capcode (not implemented)
8003	Change Capcode (not implemented)
8004	Set Time of Day
8005	Test Mode On (not implemented)
8006	Test Mode Off (not implemented)
8007	Change Audible Alert Timeout (not implemented)
8008	Change ByCapcode Command (not implemented)
FFFF	Cancel all

## Set Time of Day

When the RAVEN is POCSAG, the RAVEN will receive its time of day to be displayed on the clock using this command. This command has no meaning when the RAVEN is FLEX. The format of this command is:

8004SSSTTTGGG[YYYYMMDDhhmmss]

Where YYYY is year (4 ASCII), MM is month (2 ASCII, 01 - 12), DD is day (2 ASCII, 01 - 31), hh is hour (2 ASCII, 00 - 23), mm is minute (2 ASCII, 00 - 59), ss is second (2 ASCII, 00 - 59). In this case, the time values TTT are DONT CARE. A valid message ID and its attendant processing is appropriate here to ignore duplicate pages.

## Cancel All

As its name implies, the receipt of this command cancels all alerts and returns the RAVEN to a non-alerted state (clock mode). The format of this command is:

FFFFSSSTTTGGG

The time value TTT has no meaning in this context. A valid message ID and its attendant processing is appropriate here to ignore duplicate pages.

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