JEM Radio II Software Guide

Manual P/N M07312-001

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Description

The configuration software is used to set operational parameters and home channels in the radio. The configuration can be loaded or saved from a file.

Program Installation

The program requires a 64-bit O/S. It has been tested on Windows 7 and Windows 10.

The following folder/file structure is required. The Install Folder name can be anything but the other folders (plugins and platforms) must have those names and the plugins folder must be at the same level as the Install Folder.

Install Folder	plugins
C05053-101.exe	**platforms**
Qt5Core.dll	qwindows.dll
Qt5Gui.dll	
Qt5Network.dll	
Qt5SerialPort.dll	
Qt5Widgets.dll	

Radio Tab
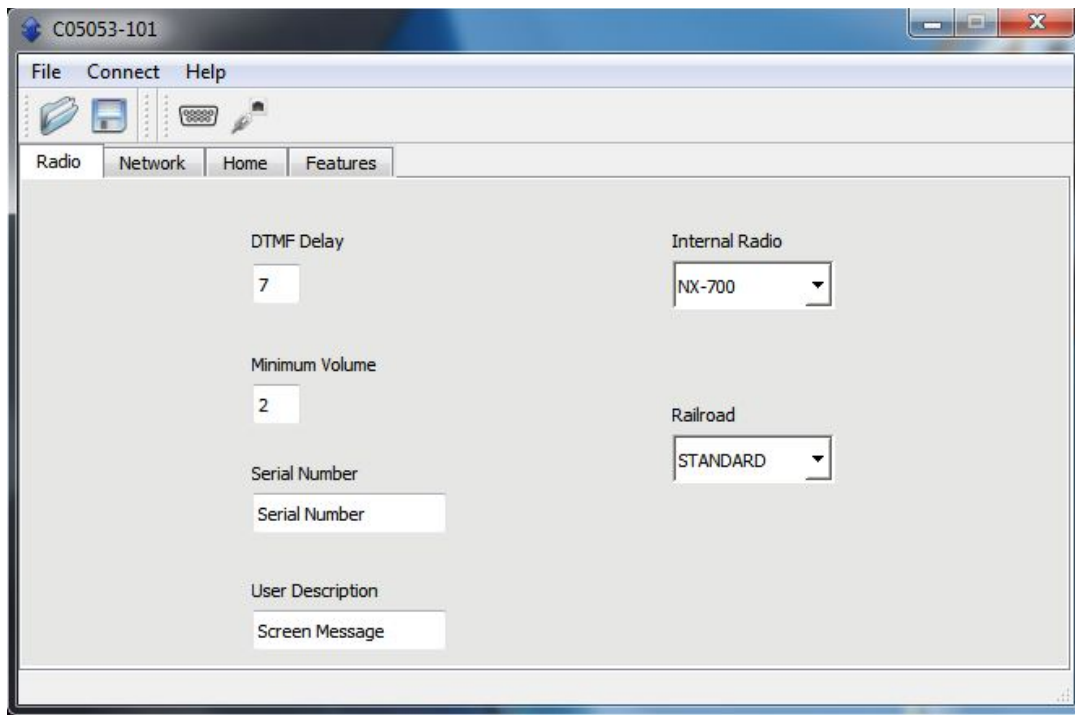
- **DTMF Delay** – This sets the minimum amount of time that a DTMF tone will transmit even if the keys are hit quicker. It is in 100's of milliseconds so a setting of 7 would be 700ms. The value range is 1 to 20.

- **Minimum Volume** – This sets the minimum volume of the panel speaker on the radio. The valid range is 0 to 20.

- **Serial Number** – This can be used for inventory tracking purposes. It has a max size of 16 characters.

- **User Description** – The text in this field is scrolled across the display on the radio at startup. It has a max size of 16 characters. It can be used to identify ownership of the radio or information about how it has been configured.

- **Internal Radio** – This parameter is used by the firmware that interfaces to the internal radio so the correct commands are used. If this doesn't match the type of internal radio that has been installed, the radio will not function correctly.

- **Railroad** - This parameter can be used to allow unique functionality for each railroad if customizations are required.

Network Tab
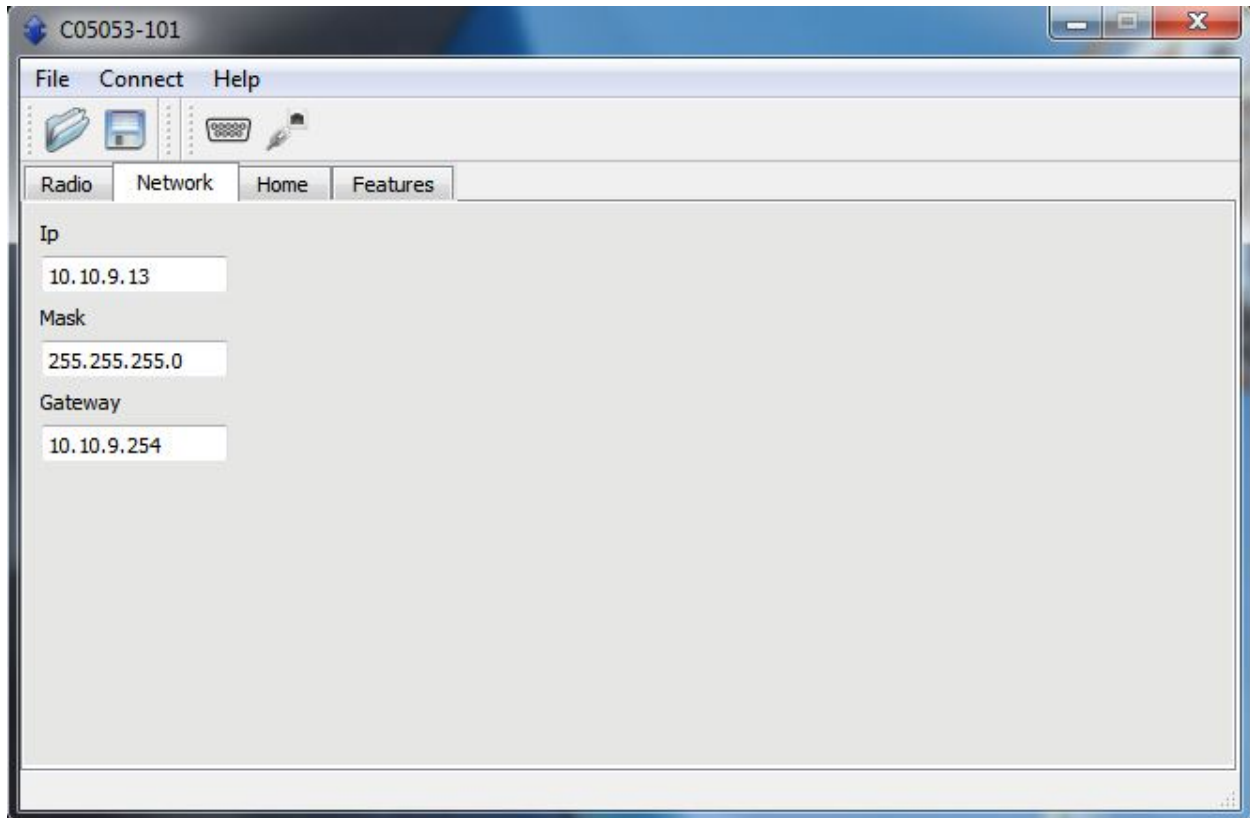
- **Network parameters** – These set the IP address of the radio. If these are changed, the radio must be restarted before it will use the new values.

Home Tab

- **Home Channels** – This table is used to configure the AAR channel numbers along with the RAN codes that are assigned to each home number (1 – 500).

  An option **LABEL** of 16 characters can be assigned that will display on the radio display when the home channel is selected. The entry text color will turn red if an invalid value is entered. The program will still send values that are red but the radio may or may not accept the entry depending on the violation.

- The program will "auto-fill" data if the TX parameter is entered first and there is no other data in that same row.

- The **RANTX** and **RANRX** fields can also be used to enter PLL codes for analog channels. (See Appendix A)

- Having nothing in the RANTX/RX fields is the same as having '00' in them

Features Tab
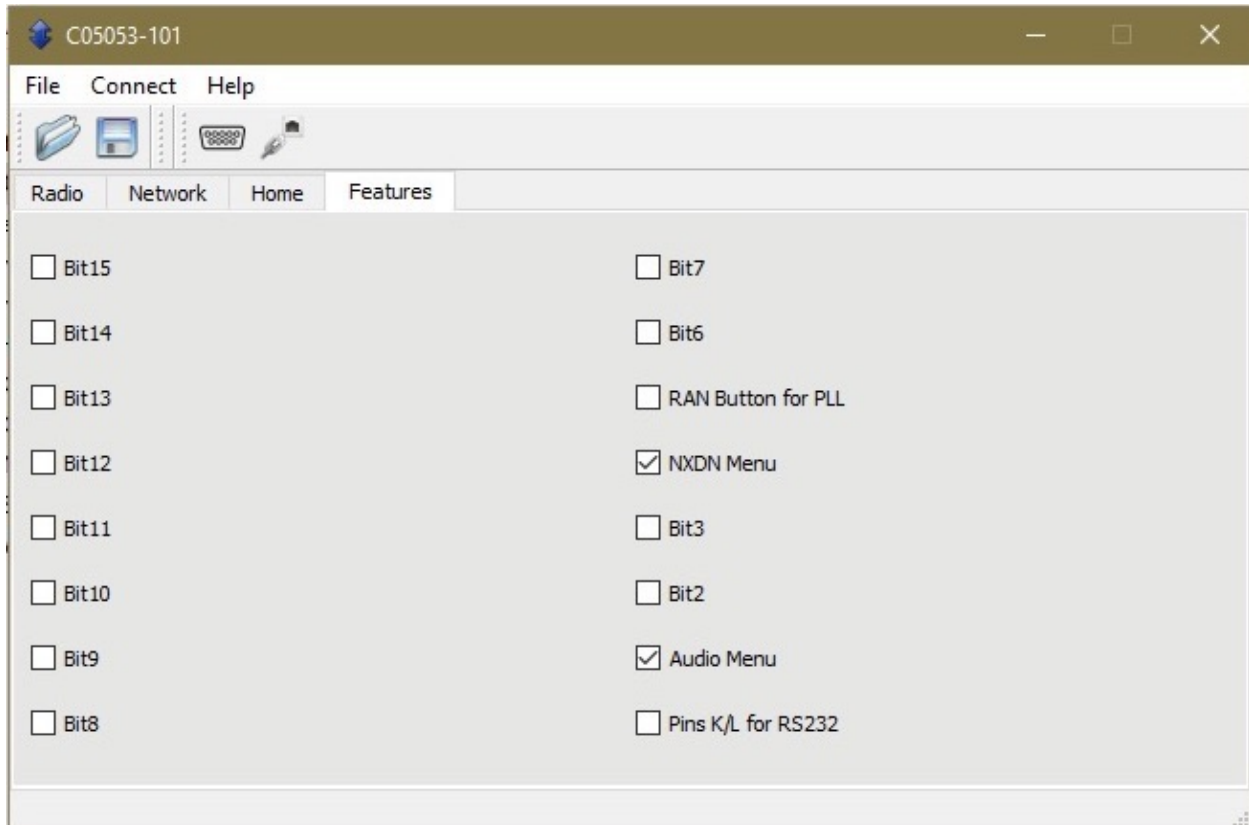
Users can limit functionality of the JEM Radio II when installed in a locomotive by deselecting an option on the **Features** tab.

For example, deselecting the **Audio Menu** will prevent end users from changing default volume settings through the JEM Radio II Audio menu. Currently there are four options that can be configured, with each "Bitxx" label acting as a placeholder for future features.

By default, each JEM Radio II ships with **Audio Menu** and **NXDN Menu** enabled.

- **Pins K/L for RS232** – The 12 pin connector has pins the can be used for I/O. Setting this bit causes the radio to use pins K/L as an RS-232 interface. This could be used to allow a 2nd control head to be used to control the radio. This should normally be unchecked in the event that a locomotive installation uses these pins for TTL levels. This should only be used in a situation where it is known what is being connected to the 12 pin connector.

- **Audio Menu** – This is used to allow changing some of the audio level outputs from the radio front panel. This would primarily be used to allow headset

operation with the radio so the user could control his side of volume as well as the volume of a 2nd headset user.

- **NXDN Menu** – This allows the user to change settings related to NXDN. There is currently only one setting available, default RAN code. Every time a new AAR channel is entered on the radio, the RAN codes will automatically go to "01". If a different RAN code is required, the user has to manually change it after every channel change. This could get cumbersome if the channel has to be changed often. Changing this setting from "01" could be useful in a certain situations if a different RAN code is being used in a local area.

- **Ran Button for PLL** – If this is checked, the RAN button on the radio will have a dual purpose and can be used to entered PLL tones when on analog channels. (See Appendix A)
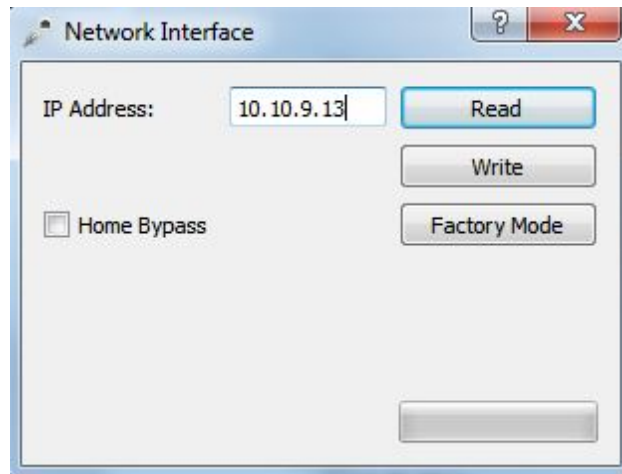
Serial Interface Dialog
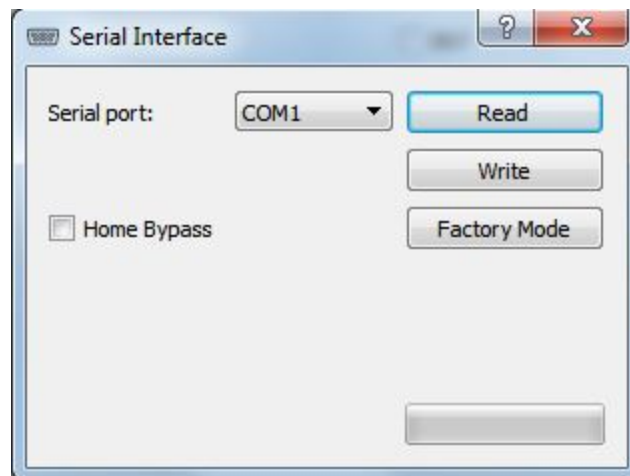
The serial interface icon brings up a dialog that allows the configuration to be downloaded/uploaded from the radio. If the radio rejects any of the parameters that are written, the "Complete" message will be replaced with a warning.

- **Factory Mode** – There are factory settings that can be changed using the MENU button on the front panel of the radio under "Audio". Selecting Factory Mode allows these settings to be changed until the radio is power cycled.

- **Home Bypass** – Uploading/Download the home channels can take some time. Checking this option will bypass reading/writing the home channels if not required.

Network Interface Dialog

The network interface icon brings up a dialog that allows the configuration to be downloaded/uploaded from the radio if it's on a network. It functions identically to the serial interface dialog.
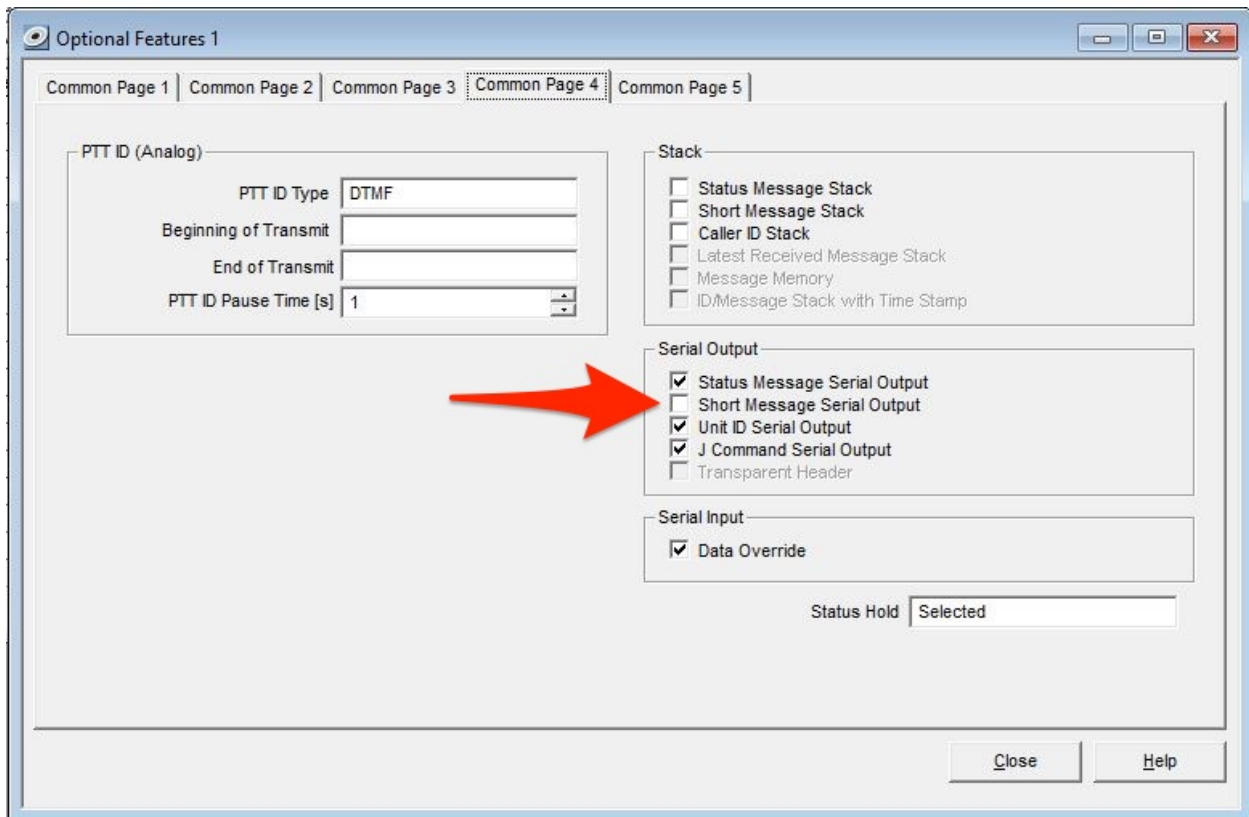
Adjust Squelch
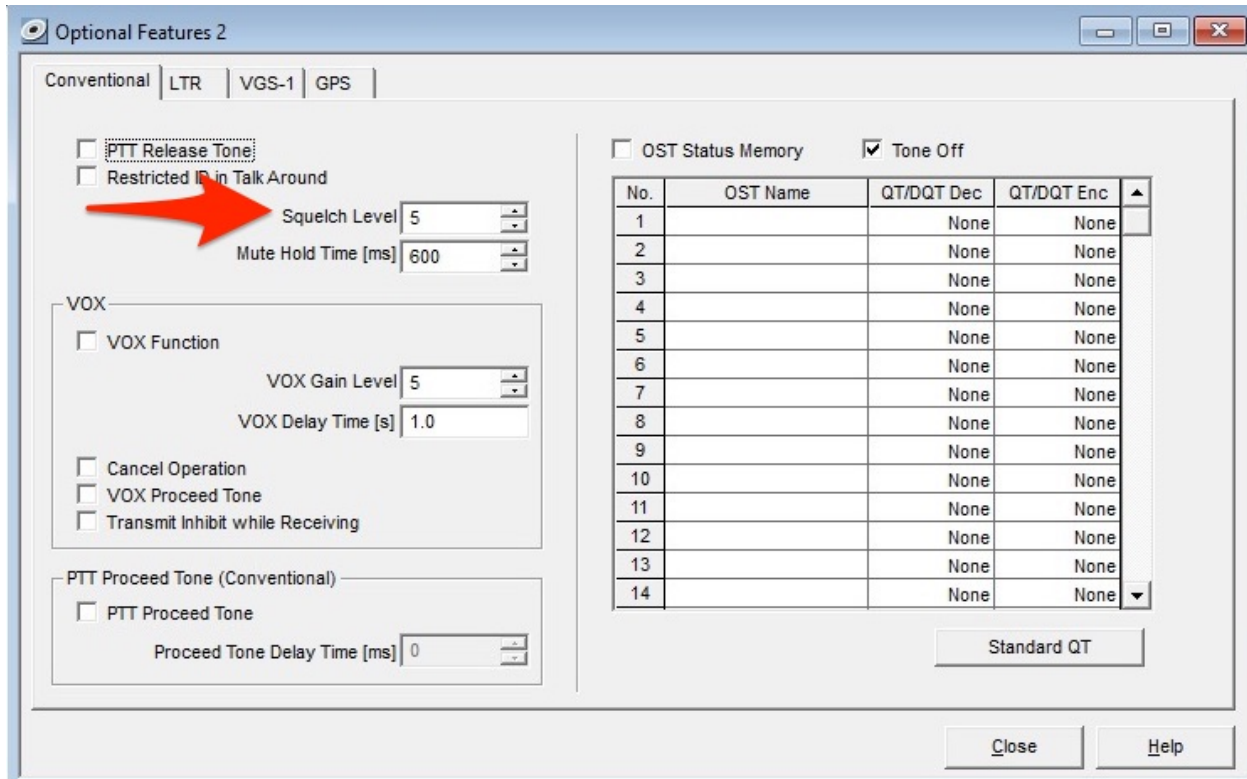
Users can adjust the Squelch Level by following these steps:

1. Open software **KPG111D(AAR) v4.40**.

2. Click on **Program** in the menu bar along the top of the window. Then select **Read data from Transceiver,** followed by **Read.** Click **OK** when the program has finished reading the radio.

3. Click on **Edit** in the menu bar followed by **Optional Features** > **Optional Features 2**.

4. A pop box should appear. Select the **Conventional** tab, and adjust **Squelch Level** to the desired setting. Squelch Level 5 default setting. Click **Close.**

5. Click on **Program** in the menu bar along the top of the window. Then select **Write data to the Transceiver,** followed by **Write.**

6. **Power cycle** the JEM Radio II when finished.

Disable Text Messaging

Users can disable the text messaging feature by following these steps:

1. Open software **KPG111D(AAR) v4.40**.

2. Click on **Program** in the menu bar along the top of the window. Then select **Read data from Transceiver,** followed by **Read.** Click **OK** when the program has finished reading the radio.

3. Click on **Edit** in the menu bar followed by **Optional Features** > **Optional Features 1**.

4. A pop box should appear. Select the **Common Page 4** tab, and uncheck the box that says **Short Message Serial Output**. Then click **Close.**
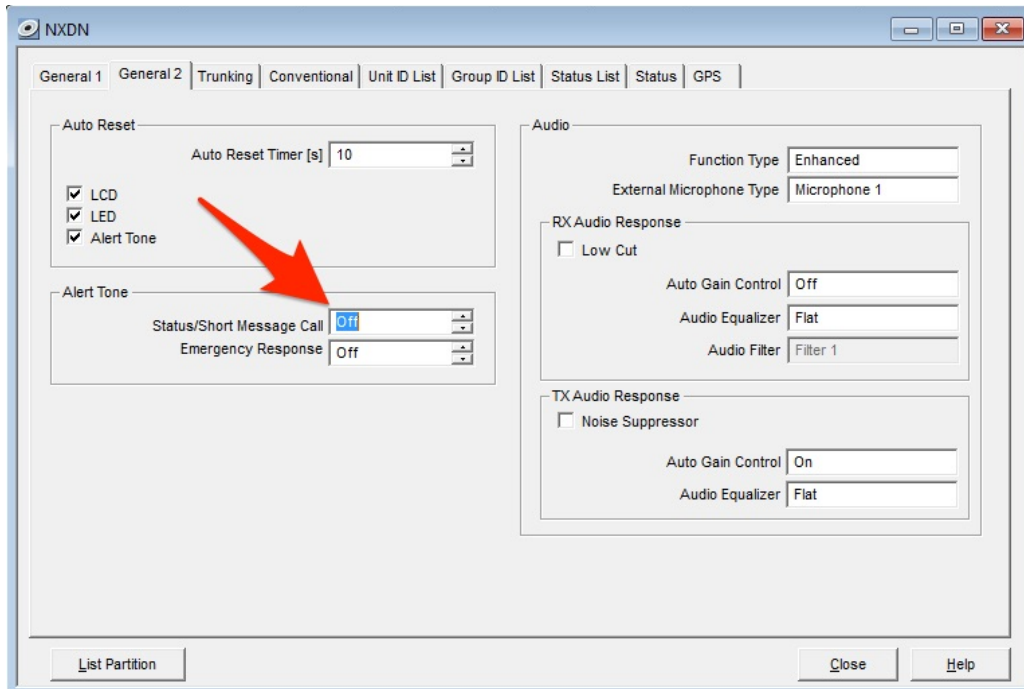
Text messaging is now disabled, but alert tones are still active. Follow these steps to disable alert tones:

1. Click on **Edit** in the menu bar followed by **NXDN** > **General 2** tab.

2. Locate the **Alert Tone** section and click on the down arrow until **Status/Short Message Call** reads *Off*.

3. Click **Close** to exit the NXDN window.

4. Click on **Program** in the menu bar along the top of the window. Then select **Write data to the Transceiver,** followed by **Write.**

5. **Power cycle** the JEM Radio II when finished.

Appendix A

2 Digit Code	Frequency (Hz)
00	NO TONE
01	67.0
02	69.3
03	71.9
04	74.4
05	77.0
06	79.7
07	82.5
08	85.4
09	88.5
10	91.5
11	94.8
12	97.4
13	100.0
14	103.5
15	107.2
16	110.9
17	114.8
18	118.8
19	123.0
20	127.3
21	131.8
22	136.5
23	141.3
24	146.2
25	151.4
26	156.7
27	162.2
28	167.9
29	173.8
30	179.9

2 Digit Code	Frequency (Hz)
31	186.2
32	192.8
33	203.5
34	210.7
35	218.1
36	225.7
37	233.6
38	241.8
39	250.3