JEM Radio II Software Guide

Manual P/N M07312-001

JEM
COMMUNICATIONS, INC

2115 Victor Place
Colorado Springs, Colorado 80915
800.284.0399
www.jemcom.com

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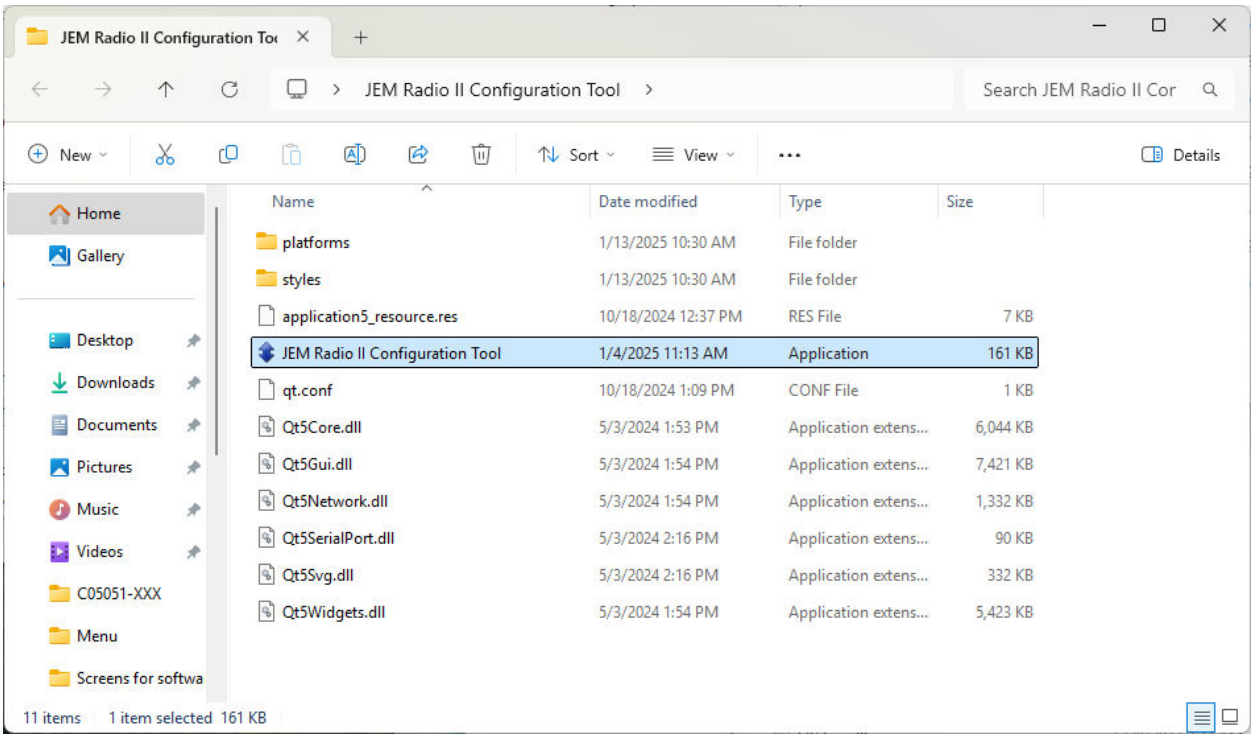
General Purpose

The JEM Radio II Configuration Tool is used to set home channels and adjust operational settings of the JEM Radio II. Customers can save a default configuration file with their preferred home channels and radio settings for future ease of programming.

Requirements

- A Windows PC running either Windows 10 or Windows 11.
- A USB-to-Serial converter (such as the one found here: https://amzn.to/4au9QmQ).
- A female-to-male DB-9 cable (such as the one found here: https://amzn.to/4h1Tsw3).

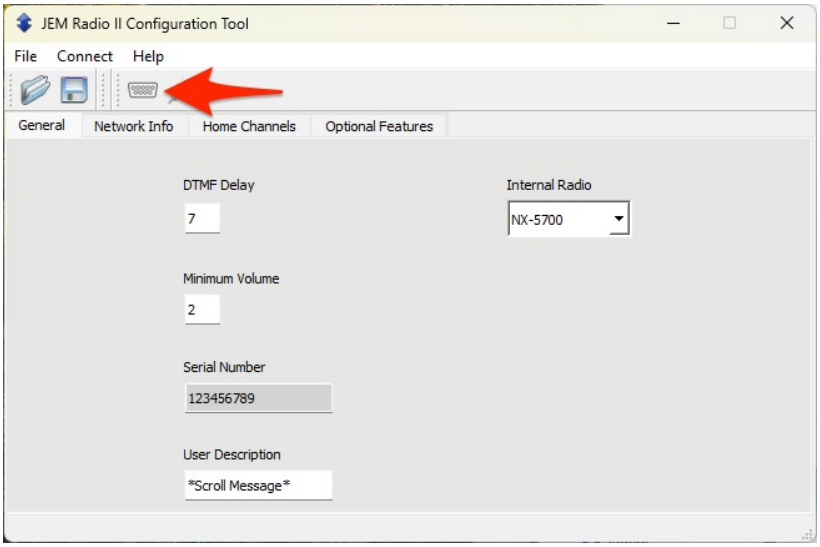
Initial Setup



After downloading the JEM Radio II Configuration Tool, unzip the folder and save the files somewhere easy for you to access. It's important to keep the current folder and file placement and names. The structure is outlined below, with folders in **bold**.

- **JEM Radio II Configuration Tool**
  - JEM Radio II Configuration Tool.exe
  - Qt5Core.dll
  - Qt5Gui.dll
  - Qt5Network.dll
  - Qt5SerialPort.dll
  - Qt5Widgets.dll
  - Qt5Svg.dll
  - application5_resource.res
  - **platforms**
    - qwindows.dll
  - **styles**
    - qwindowsvistastyle.dll

Interacting with the JEM Radio II

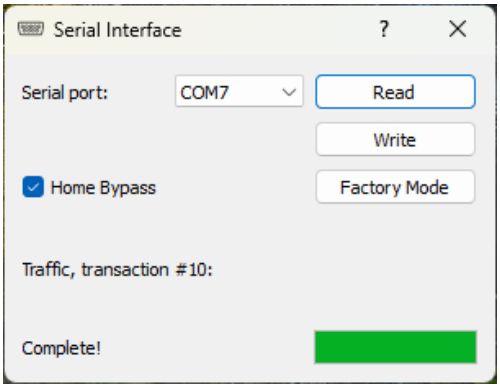


To launch the config tool, double click on the ***JEM Radio II Configuration Tool.exe*** file in the JEM Radio II Configuration Tool folder. Alternatively, you can create a desktop shortcut to the .exe file for easier access.

After opening the configuration tool, click on the Serial Interface icon (detailed on the next page), ensure the correct COM port is selected for your USB to Serial adapter and click Read to populate the configuration tool with all of the radio's current settings and home channels (if any have been saved to the radio).

You can now make changes to radio across the General, Network Info, Home Channels and Optional Features tabs, each of which are detailed later in this guide.

Serial Interface Dialog

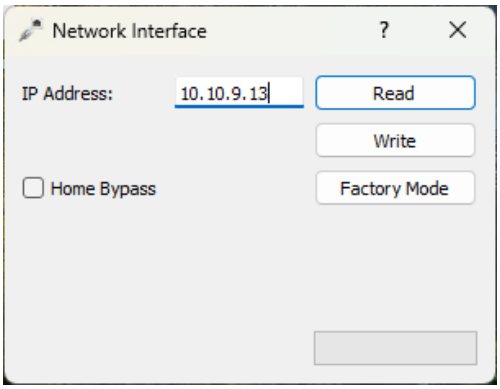


The serial interface icon brings up a dialog that allows the configuration to be read or written to the radio. There are two options included on the serial interface dialog window:

- **Factory Mode** – Once a connection to the radio is established, clicking Factory Mode on the Serial Interface Dialog window will allow you to adjust the factory audio settings of the JEM Radio II by going to *Menu* > *Audio* > *Factory* on the radio itself. To exit Factory Mode, power cycle the radio.
- **Home Bypass** – Checking **Home Bypass** on the Serial Interface Dialog will bypass writing or reading home channels when communicating with the radio to save you some time when adjusting features.

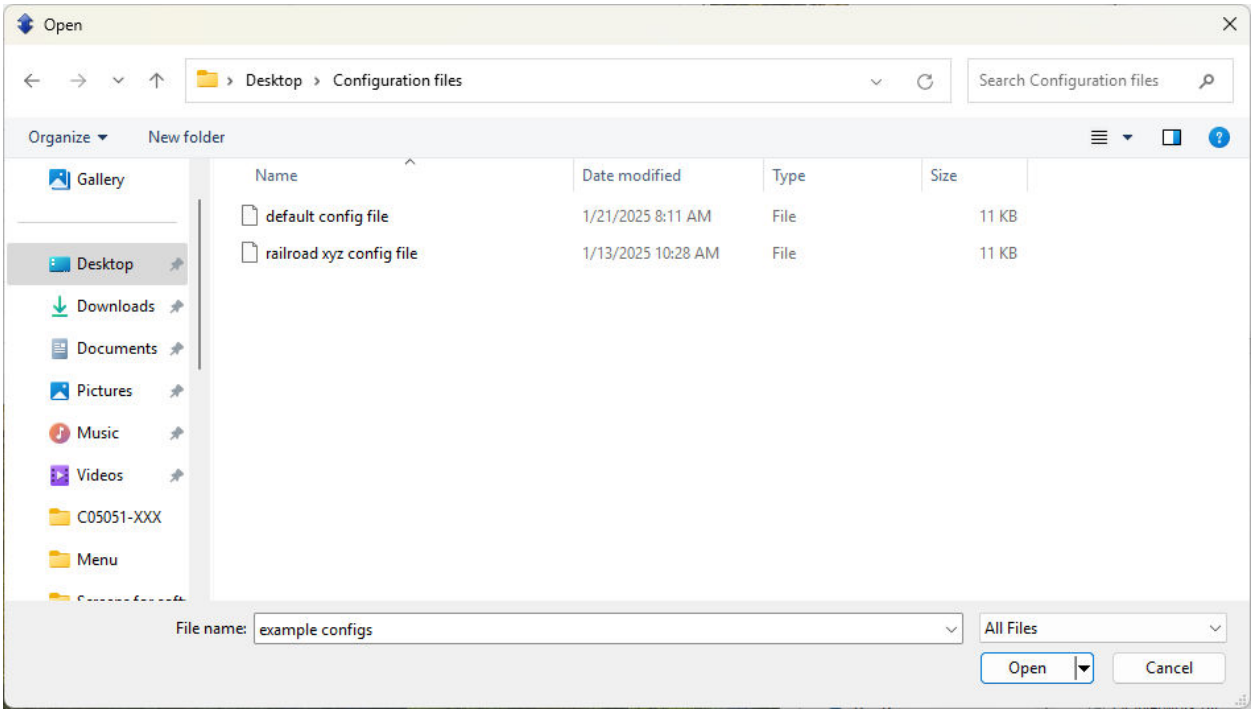
If the radio rejects any of the parameters, the “Complete” message will be replaced with a warning.

Network Interface Dialog



The network interface icon brings up a dialog that allows you to connect to and interact with the JEM Radio II via the configuration tool over a networked connection. It's functionally identical to the Serial Interface Dialog.

Configuration Files



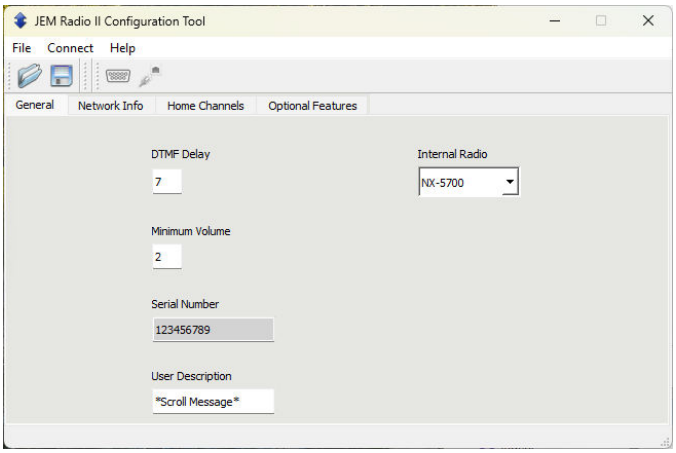
The JEM Radio II Configuration Tool can create and load configuration files that contain your preferred settings and home channels for repeat programmability in your fleet.

To save a configuration file after customizing settings and entering your home channels, you can either click on File > Save As or click on the Save (disk) icon.

To load and then write a configuration file to the JEM Radio II, click on Open (folder) icon, locate the file on your PC, click open in the File Explorer window. You can then write the configuration file to a connected JEM Radio II through the Serial or Network Interface button(s).

If you've opened a configuration file and made some changes, you can click on the Save icon to overwrite the existing configuration file. However, if you want to save the edited configuration file as a new file, you'll need to select File > Save As from the menu bar, give the new configuration a name and click Save.

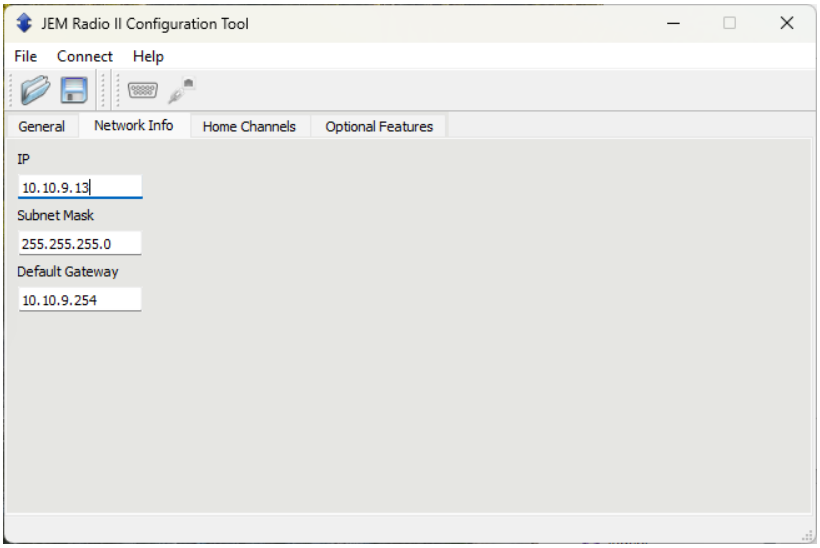
General Tab



Upon opening the JEM Radio II Configuration Tool you'll be greeted with the General tab where you'll find various settings and information about the JEM Radio II you're connected to.

- **DTMF Delay** – This sets the minimum amount of time that a DTMF tone will transmit even if the keys are hit quicker. The delay in 100s of milliseconds, so a setting of 7 would be 700ms. The value range for this setting is 1 to 20.
- **Minimum Volume** – This sets the minimum volume of the panel speaker on the radio. Once set in a valid range between 0 and 20, the Volume button on the JEM Radio II will not go lower. For example, if you set the minimum volume to 5, the volume down button will stop responding once the radio's volume reaches 5.
- **Serial Number** – This is the factory assigned serial number of the JEM Radio II for inventory tracking purposes. To get the serial number from a radio, connect it to your PC and Read the radio. The configuration tool does not allow for writing of new serial numbers to the JEM Radio II.
- **User Description** – The text in this field is scrolled across the display on the radio at startup. The max length of the messages is 16 characters. It can be used to identify ownership of the radio or information about how it has been configured.
- **Internal Radio** – This field ensures the configuration tool and the radio's internal firmware can properly communicate. Ensure that this dropdown matches the core radio before writing to the radio. If this setting doesn't match the core radio, the radio will not function correctly.

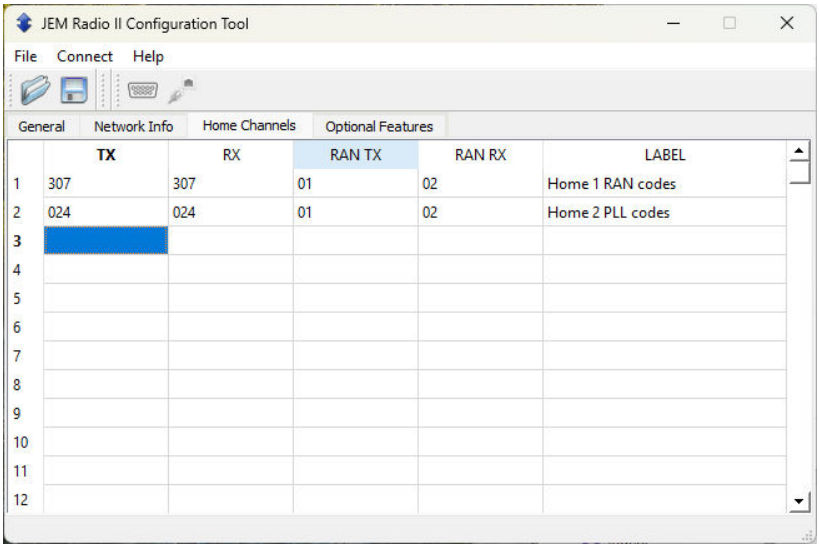
Network Info Tab



The Network Info tab is where you can view the current IP address of the radio, including Subnet Mask and Default Gateway should you want to connect to the radio via the Network/Ethernet port.

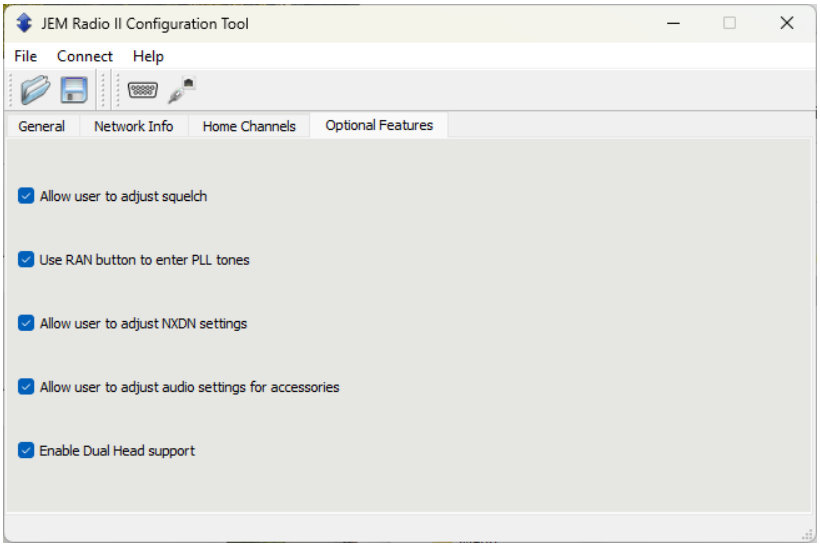
Here you can also change any of the values to match your network parameters. If you do make changes to the network settings, you will need to power cycle the radio before the radio will use the new values.

Home Channels Tab



- This table is used to configure the AAR channel numbers along with the RAN codes that are assigned to each home number (001 – 500). It's important that all home channels are a three digit number as they correspond to directly to the AAR channel plan.
- 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-populate the RX channel after entering the TX if the TX parameter is entered first and there is no other data in that same row.
- The **RAN TX** and **RAN RX** fields can also be used to enter PLL codes for analog channels. See Appendix A for available PLL codes and the corresponding RAN code. For example, if you want to enter PLL codes 67.0 for a channel, you'll need to enter RAN 01 in the configuration tool for the analog home channels.
- Leaving the RAN TX/RAN RX fields blank is the same as having '00' in them.

Optional Features Tab



Users can adjust the functionality of the JEM Radio II on the **Optional Features** tab.

- **Allow user to adjust squelch** – Enabled by default. When enabled, the squelch setting on the JEM Radio II is adjustable by the user via the radio itself by accessing *Menu* > *General* > *Squelch*. The squelch can be adjusted between 3 and 7.
- **Use RAN Button to enter PLL tones** – Enabled by default. When enabled, 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)
- **All user to adjust NXDN settings** – Enabled by default. This setting encompasses two different NXDN-related features. The first feature allows users to change the default transmit and receive RAN codes for NXDN digital channels by going to *Menu* > *NXDN* on the radio. From the factory, all AAR channels use RAN code "01." Allowing users to change the default can be useful in areas where a different RAN code is commonly used, saving users from manually changing the code each time they switch channels.

  The second NXDN setting it impacts is found in Menu > Display > NXDN Data. This setting disables text messages received over the NXDN standard from being shown on the JEM Radio II's display. A setting of 1 indicates messages will be shown, while a setting of 0 will prevent messages from being shown.

- **Allow user to adjust audio settings for accessories** – Disabled by default. When enabled, this setting is used to allow changing some of the audio level outputs using the the JEM Radio II's built-in settings via *Menu* > *Audio* > *User*. 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 second headset user.
- **Enable Dual Head support** – Disabled by default. When enabled, it allows pins K and L on the 12 pin connector to function as an RS-232 interface to connect a second control head to the JEM Radio II. It's recommended to leave this feature disabled unless a second control head is needed.

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