USR®

USR®
Courier® Console Port Server & Power Switch

Graphical User Interface
User Guide

For the following product:
USR4204 Console Port Server & Power Switch Hybrid

Rev 1.0 04/2017

Overview

The USR4204 Graphical User Interface (GUI) is a software application that runs on a computer having a Windows operating system to make configuring and updating USR4204s much faster and easier than using the USR4204's native menu-driven interface.

- ✓ On a single screen, view and edit the complete set of parameters, labels, accounts, and banners of a local or remote USR4204.

- ✓ Save USR4204 configurations to files, then easily create duplicate USR4204s by recalling the files into the GUI and loading the configurations into other USR4204s.

- ✓ Easily flash new firmware into local or remote USR4204s.

- ✓ Use a terminal emulation mode to communicate with a USR4204's menu-driven interface.

Symbols Used in this Guide

This symbol invites the User to read more technical details.

This symbol warns the User to stop, read, and understand critical information.

This symbol alerts the user to important operating and maintenance instructions.

Summary of USR4204 GUI Benefits

USR4204 Native Menu-Driven Interface	USR4204 GUI Software
The menu-driven interface is simple to use, but outdated.	A **point & click graphical interface** is the preferred interface paradigm.
Configure duplicate USR4204s by entering each parameter individually into the menu-driven interface. Administrators must remember or document each parameter setting.	**Easily configure** duplicate USR4204s from one or more **prebuilt image files**.
The USR4204's native firmware update process requires a capable terminal application and the knowledge of the terminal's file upload process.	**Easily update** the USR4204's firmware.
Navigate multiple sub-menus to find and view configuration parameters or User accounts.	A **single-screen management dashboard** of all USR4204 configuration parameters and User accounts is provided for convenient viewing and editing.
To contact a remote USR4204, the phone number of each remote USR4204 must be remembered or noted, and manually typed into the terminal every time.	Provides a simple means of using a modem to **contact remote USR4204s**. The modem dial string is remembered from the previous session, or recalled with configuration files.
Users must provide a third-party terminal application that runs on the computer's operating system.	Integrated **Terminal mode** relieves Users from providing a separate third-party terminal emulator application.
Users must configure the third-party terminal application for USR4204 compatibility.	Terminal mode default **settings match USR4204** requirements.
Users must type commands into the terminal.	Terminal mode enhances the USR4204 menu-driven interface with **point & click graphical interface** features.
The availability of Macro keys is terminal-dependent.	Terminal mode provides Macro keys for recording & playback of routine tasks.

GUI Installation

System requirements for installation:

- Windows XP, 7, 8.1, or 10
- screen resolution 1024x768 or higher

For managing a local USR4204, the system must also have:
- a COM port assigned to one of the following:
  o RS-232 serial port
  o USB port with a USB-to-serial cable

For managing a remote USR4204, the system must also have:
- a COM port assigned to one of the following:
  o an RS-232 serial port connected to a serial data communication device (e.g. analog modem)
  o a USB port and USB-to-serial cable connected to a serial data communication device (e.g. analog modem)
  o an internal analog modem
  o a USB port connected to a USB analog modem

Download **4204-GUI.zip** from the USRobotics website www.usr.com/support/4204 and save it to a convenient folder. For example, the desktop folder (C:\Users\{your username}\Desktop).

Extract the contents of the zip file. For example, right-click the zip file, then select "extract all". This process may be different in your version of Windows. Check your Windows help files for details on unzipping a zip file.

The extracted folder will contain the GUI application (**GUI4204.exe**) and one ActiveX control module (**MSComm32.ocx**). You may move this folder into any convenient directory.

Launch the GUI application (double-click, or select & press **Enter**). You may need to login to Windows as an Administrator before you launch. The GUI will display the Configuration Dashboard, populated with default USR4204 parameters.

Depending on your Windows operating system, you may see an error message the first time you launch the GUI application. If so, close the message and try launching the GUI application again. If you still see an error message, try moving the **MSComm32.ocx** file into the Windows System32 or System64 folder, then launch again.

If Windows complains about **MSComm32.ocx** not being properly registered, an Internet search for the problem yields several possible remedies, such as the following:

METHOD 1

1. Copy MSComm32.ocx to C:\Windows\System32 (or SysWow64) folder

2. From **Start**, Type **Run** then press **Enter** then under Run, type:

  regsvr32 %Systemroot%\System32\mscomm32.ocx

METHOD 2

Re-register MSComm32.ocx file from an elevated command prompt

a. Click **Start**; in the start search box, type **cmd**.

b. Right click on cmd.exe and choose to "Run as administrator".

c. Type the following command and press **Enter** (to un-register):

  regsvr32 /u MSComm32.ocx

d. Type the following command and press **Enter** (to re-register):

  regsvr32 /i MSComm32.ocx

e. Close the command prompt and then try to run the program.

f. If Windows still complains, copy MSComm32.ocx to C:\Windows\System32\

The Configuration Dashboard

Figure 1 shows the USR4204 GUI Configuration Dashboard loaded with example settings. The Configuration Dashboard offers graphical buttons, text fields, pull-down boxes, and check-boxes that represent the settings of a USR4204.
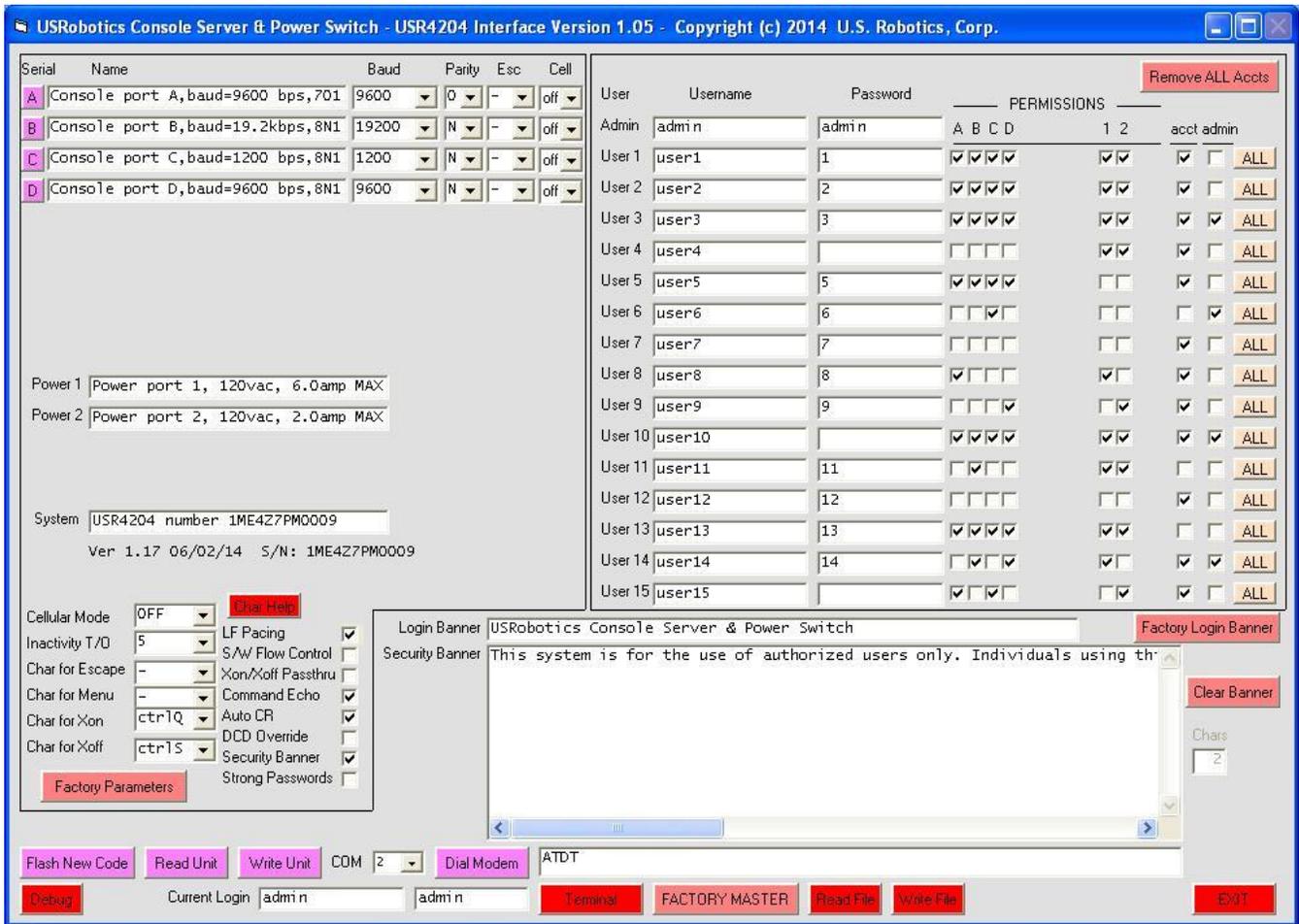
Figure 1

The buttons and check-boxes are controlled by point & click, text is typed into the text fields, and the pull-down boxes can be typed or clicked.

The Configuration Dashboard presents an Administrator with all USR4204 system parameters on a single screen (the USR4204 native menu-driven user interface requires navigation to sub-menus to reach most system parameters).

Load Factory Settings

Factory settings can be recalled into the GUI's **Parameters** group, **Accounts** group, **Login Banner**, and **Security Banner**, or can be recalled collectively with one click.

The **Factory Parameters** button loads factory text and settings into the **Parameters** group.

The **Remove ALL Accts** button clears all Usernames, Passwords, and Permissions from the **Accounts** group.

The **Factory Login Banner** button loads the text *USRobotics Console Server & Power Switch* into the **Login Banner**.

The **Clear Banner** button clears the **Security Banner**.
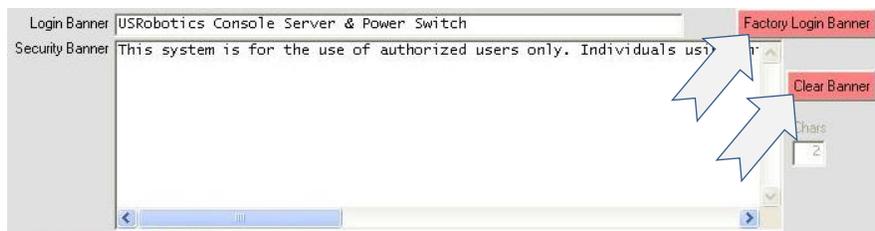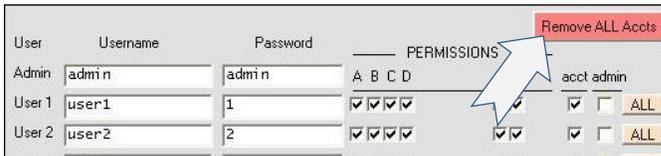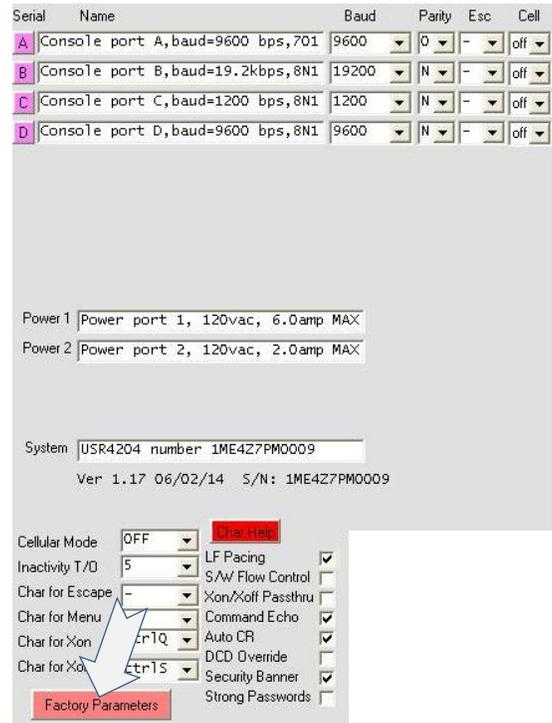
With one click, the **Factory Master** button loads factory text and settings into the **Parameters** group and **Login Banner** and clears the **Accounts** group and **Security Banner**.

Debug Mode

When troubleshooting, USRobotics Technical Support may request a debug file. Click the red **Debug** button to capture a debug trace to a log file. The button will turn green to indicate that tracing is ON. Every new debug session will create a new log file.

Click the green **Debug** button to discontinue the debug session and close the current log file. The button will turn red to indicate that logging is OFF. The debug files are stored in the same directory as the GUI application.

Tool Tips

Helpful tool tips appear when the cursor hovers over buttons and text fields.
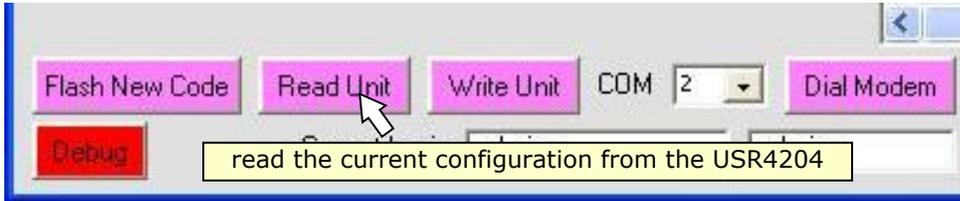
Closing the GUI

To close the GUI application, click the **Exit** button in the bottom right corner.

> Do not use the Alt+F4 keyboard shortcut to close the GUI application!
> Do not use the ⊠ icon in the top right corner to close the GUI application!

Manage a Local USR4204

The computer can connect directly to a local USR4204 as illustrated in Figure 2.
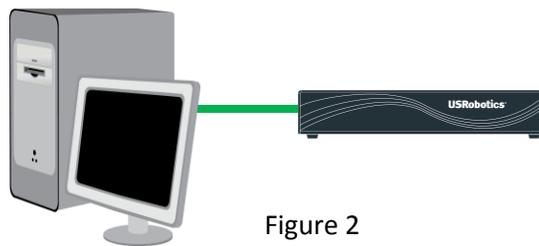
Figure 2

1. Connect the serial port of the PC to the USR4204 Terminal Port. (see the *USR4204 User Guide* for cabling requirements)

2. Launch the GUI application.

3. If security is enabled in the USR4204, enter a valid username and password into the **Current Login** text boxes. The username and password are case-sensitive.
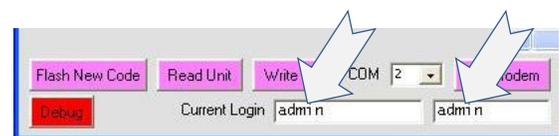
4. Every time the GUI launches, it automatically recalls the COM port number from the previous session. If necessary, use the **COM** pull-down box to select the COM port (1 through 16) that the computer's operating system assigned to the serial port.
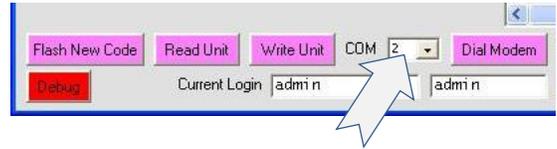
Read the Current Configuration from the USR4204

Click the **Read Unit** button to automatically login to the USR4204 and read its settings into the GUI Configuration Dashboard.

> The USR4204 is a serial interface device. The GUI will display current settings only after the **Read Unit** button has been clicked. Any configuration changes made in the GUI will not be written to the USR4204 until the **Write Unit** button has been clicked.

Write the Current GUI Configuration into the USR4204

Starting from factory default settings, or after loading a configuration into the GUI with a Read Unit or Read File operation, modify any setting or text in the Configuration Dashboard, and then click the **Write Unit** button to send the new configuration to the USR4204.
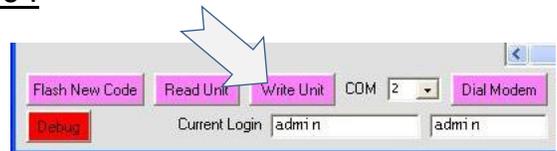
To disable security in the USR4204, click the **Remove ALL Accts** button (which deletes all sixteen accounts from the GUI Configuration Dashboard) before initiating the **Write Unit** operation.
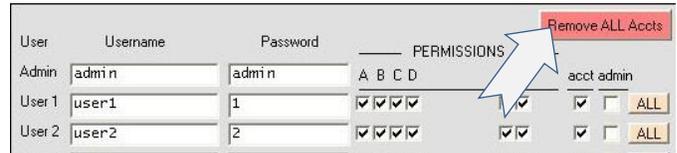
Communicate Directly with the USR4204's Menu-Driven Interface

Terminal mode is a terminal emulation screen that is specially tailored for use with the USR4204. Click the **Terminal** button to switch to terminal mode and interact directly with the USR4204.

Figure 3 shows the USR4204 GUI Terminal Screen.

The terminal's serial parameters are fixed at 9600bps,8N1 to match the USR4204's terminal port. The terminal screen offers two function keys, six user-programmable macro keys, data capture, and a graphical command overlay.
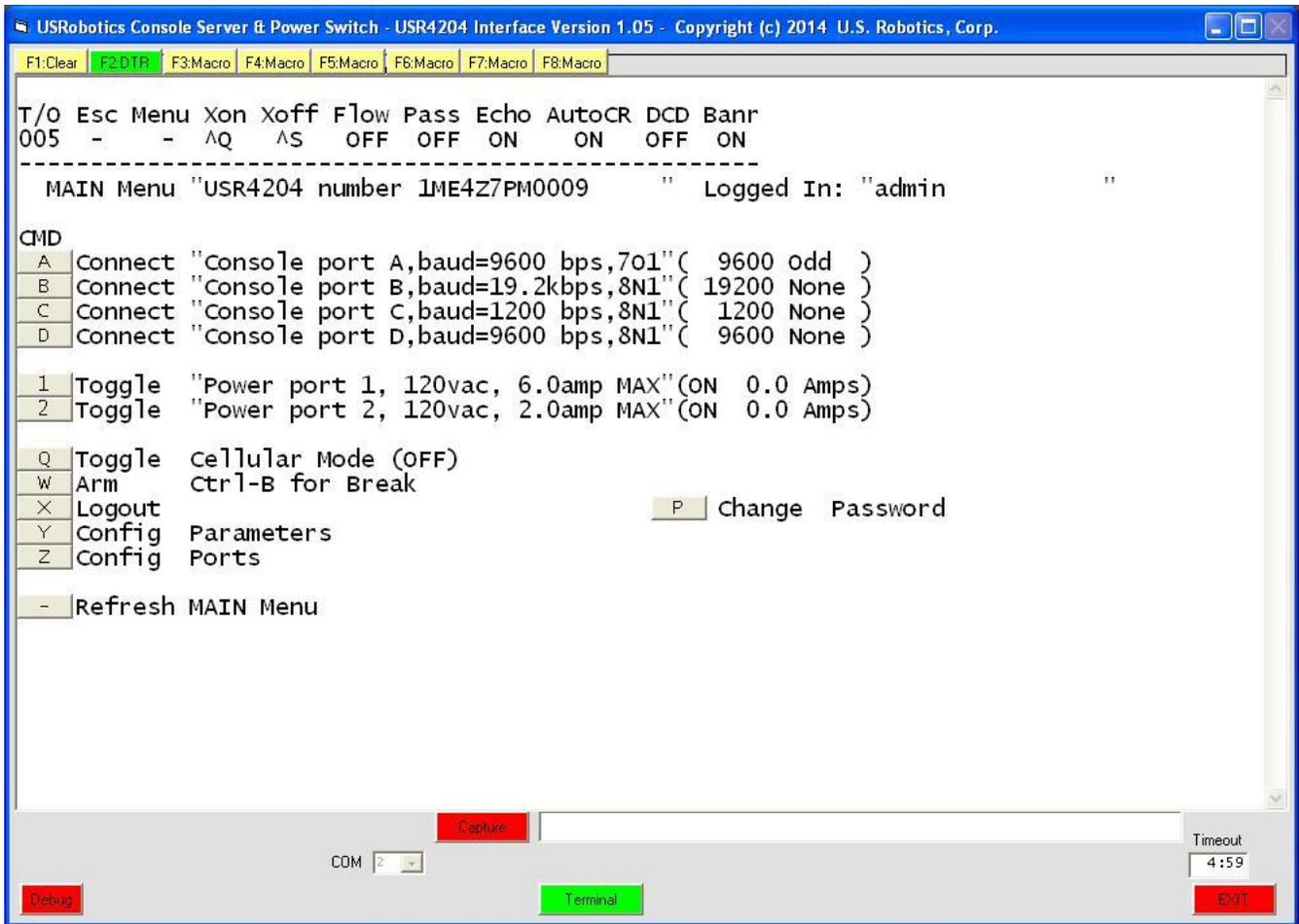
Figure 3

When the terminal mode is on, the **Terminal** button is green. Click the **Terminal** button again to return to the GUI Configuration Dashboard.

The **Debug** button and **Exit** button operate as described in the *Configuration Dashboard* section of this document. In terminal mode the **COM** port pull-down box is viewable only.

When USR4204 security is enabled, the **Timeout** display shows the remaining time until the USR4204 automatically closes any open port and logs out.

Function Keys

Click the **F1** button or press the **F1** key on the keyboard to clear the screen.

Click the **F2** button or press the **F2** key on the keyboard to toggle the DTR signal of the selected COM port OFF (red) or ON (green).
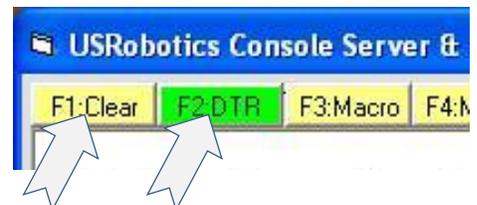
Macro Keys

Macro keys make managing the USR4204 or the target equipment easier by sending frequently used commands or text strings with a single click or keystroke. The terminal screen's function keys **F3** through **F8** are user-programmable macro keys. The macro keys are empty upon GUI start-up. Macro strings programmed into these keys are saved into configuration files, and will be loaded into the macro keys when a configuration file is recalled. The configuration files are located in the same directory as the GUI application.

Program a Macro String

Hold down **Shift** on the keyboard, and either click the GUI function button or press the keyboard function key that you want to program. A dialog box will open.

Type a macro string into the dialog box. (Use \n for <CRLF>)

Click the GUI function button or press the keyboard function key again to end programming.

Playback a Macro String

Click the GUI buttons or press the keyboard function keys **F3** through **F8** to send the macro strings to the selected COM port.

Capture Incoming Data

The terminal can log all incoming serial traffic to a file.

1. Type a filename into the **Capture textbox** (excluding the extension, and <u>don't</u> press **Enter** on the keyboard). If no filename is entered, a file named **CAP_[date]_[time].TXT** will be created, and data will be captured into it until **Capture** is disabled or the GUI closes. The capture files are stored in the same directory as the GUI application.
2. Click the **Capture** button to toggle capture mode on. The button will turn green to indicate that data is being captured.

Click the **Capture** button again to toggle capture mode off.

Command Overlay

Normally a User enters commands into the USR4204 by typing the commands into a keyboard. The GUI terminal screen provides graphical buttons that augment the USR4204's menu-driven user interface by adding a graphic overlay onto the USR4204 menus. This allows commands to be executed either by point & click or by keyboard entry.

```
CMD
  A  Connect "Console port A,baud=9600 bps,7o1"(  9600 Odd  )
  B  Connect "Console port B,baud=19.2kbps,8N1"( 19200 None )
  C  Connect "Console port C,baud=1200 bps,8N1"(  1200 None )
  D  Connect "Console port D,baud=9600 bps,8N1"(  9600 None )

  1  Toggle  "Power port 1, 120vac, 6.0amp MAX"(ON  0.0 Amps)
  2  Toggle  "Power port 2, 120vac, 2.0amp MAX"(ON  0.0 Amps)

  Q  Toggle  Cellular Mode (OFF)
  W  Arm      Ctrl-B for Break
  X  Logout                                       P  Change  Password
  Y  Config  Parameters
  Z  Config  Ports

  -  Refresh MAIN Menu
```

Manage a Remote USR4204

When the computer's COM port is assigned to a data communications device (e.g. analog modem) that can connect over a network to another data communications device at a remote location and interface thru a USR4204 to the console port of the remote target equipment (as illustrated in Figure 4), the GUI can use the same connectivity to manage the remotely-located USR4204.
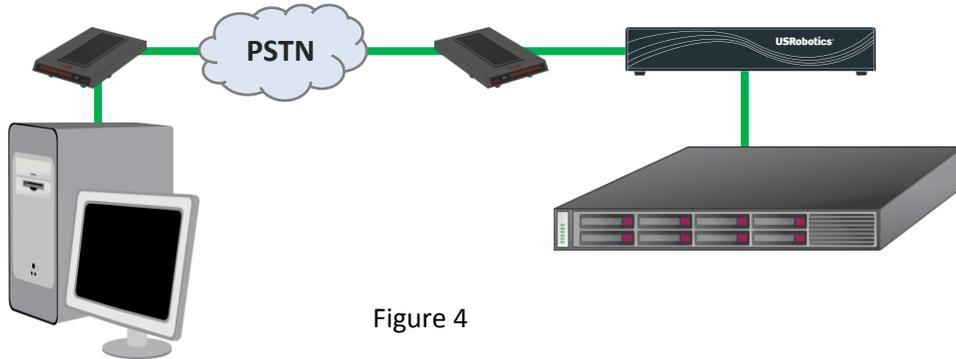
Figure 4

1. Launch the GUI application.

2. If security is enabled in the USR4204, enter a valid username and password into the GUI **Current Login** text boxes. The username and password are case-sensitive.

3. Every time the GUI launches, it automatically recalls the COM port number from the previous session. If necessary, use the **COM** pull-down box to select the COM port (1 through 16) that the computer's operating system assigned to the local modem.

4. Every time the GUI launches, it also recalls the dial string from the previous session. If necessary, enter into the **Dial Modem text box** a dial string that commands the local modem to connect to the remote modem.

5. Click the **Dial Modem** button. The GUI will send the dial string to the local modem. The local modem will dial the remote modem, connect, and the GUI will automatically login to the USR4204 and switch to the terminal screen to display the USR4204 Main Menu.

6. Click the **Terminal** button to return to the Configuration Dashboard.

Notice that the **Dial Modem** button has changed to a **Hang Up** button.

Read the Current Configuration from the Remote USR4204

Once the GUI is connected to the remote USR4204, follow the same steps as a local **Read Unit** operation.

Write the Current GUI Configuration into the Remote USR4204

Once the GUI is connected to the remote USR4204, follow the same steps as a local **Write Unit** operation.

Communicate with the Remote USR4204's Command-Line Interface

Once the GUI is connected to the remote USR4204, follow the same steps as a local **Terminal Mode** operation.

Disconnect from the Remote USR4204

From the Configuration Dashboard, click the **Hang Up** button.
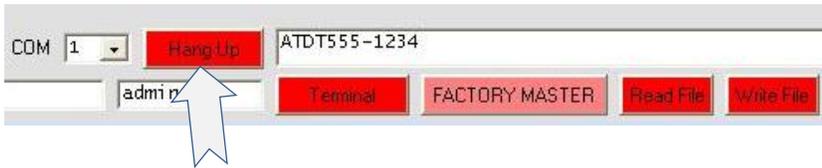
When the connection has ended, the **Hang Up** button changes back to a **Dial Modem** button.

The GUI does not support connections to packet networks that use IP addressing (e.g. LAN or cellular data networks). In that case consider using 3rd party modem emulation middleware in your Windows environment to translate the modem dial string and COM port into an IP address over TCP.

Save the Configuration to a File

The contents of the GUI Configuration Dashboard can be saved to .dat files. The .dat file contains the entire set of parameters displayed in the GUI Configuration Dashboard along with the macro keys, COM port number, and dial string. The file contents are encrypted to protect usernames and passwords. The configuration files are located in the same directory as the GUI application.

1. Restrict usage of the .dat file by entering a username and password into the **Current Login** text boxes. Or leave the **Current Login** text boxes empty to allow unrestricted usage of the file. The username and password are case-sensitive.

Do not forget the username and password. The same username and password used to <u>save</u> the file are also used to <u>open</u> the file.

2. Click the **Write File** button. (Click again to cancel)

3. If prompted, click **Yes** to proceed.

4. The file encryption is based on a Personal Identification Number (PIN). The GUI will prompt once for the PIN when writing or reading a file, and will use that PIN as the encryption key until the GUI closes. Enter a four-digit PIN by clicking numbers on the PIN pad or typing numbers on the keyboard, then click **Enter** on the PIN pad or press **Enter** on the keyboard.
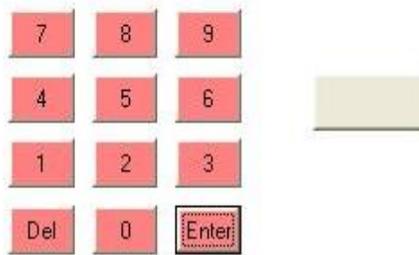
> Do not forget the PIN. The same PIN used to save the encrypted passwords is also used to decrypt the usernames and passwords when the file is read into the GUI.

5. A **Write Filename** dialog box will appear next to the **Write File** button. Enter a filename into the **Write Filename** dialog box and press **Enter** on the keyboard. The filename is not case-sensitive.
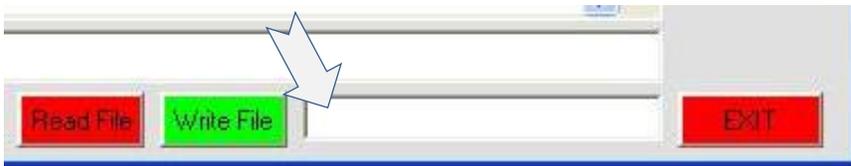
> .dat will be appended to the filename

> Do not use Windows reserved words as filenames (e.g. COM1, PRN, AUX, NUL, etc.)

Recall the Configuration from a File

A saved configuration file can be recalled into the GUI Configuration Dashboard. The file contains the entire set of parameters displayed in the GUI Configuration Dashboard along with the macro keys, COM port number, and

dial string. The file contents are encrypted to protect usernames and passwords. The configuration files are located in the same directory as the GUI application.

1. If the file was saved with restricted access, enter the username and password into the **Current Login** text boxes, or leave them empty if access is not restricted. The username and password are case-sensitive.

2. Click the **Read File** button (Click again to cancel)

3. If prompted, click **YES** to proceed.

4. The file encryption is based on a Personal Identification Number (PIN). The GUI will prompt once for the PIN when writing or reading a file, and will use that PIN as the encryption key until the GUI closes. Enter a four-digit PIN by clicking numbers on the PIN pad or typing numbers on the keyboard, then click **Enter** on the PIN pad or press **Enter** on the keyboard.
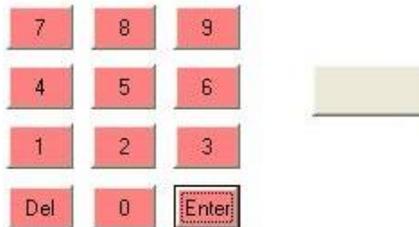
5. A list of configuration files will appear. Click the desired filename from the list. If the username, password, and PIN are correct the configuration will immediately load into the GUI.

Flash New Firmware into a USR4204

The GUI simplifies the process of flashing firmware into a USR4204.

> The USR4204 firmware (*.hex) files must be located in the same directory as the GUI application.

To Flash Firmware into a Local USR4204

1. Connect the serial port of the PC to the USR4204 Terminal Port. (see the *USR4204 User Guide* for cabling requirements)

2. Launch the GUI application.

3. If security is enabled in the USR4204, enter a valid username and password into the **Current Login** text boxes. The username and password are case-sensitive.
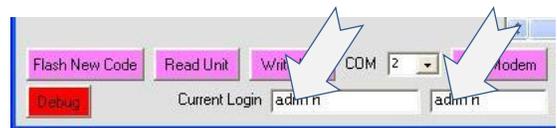
4. Every time the GUI launches, it automatically recalls the COM port number from the previous session. If necessary, use the **COM** pull-down box to select the COM port (1 through 16) that the computer's operating system assigned to the serial port.
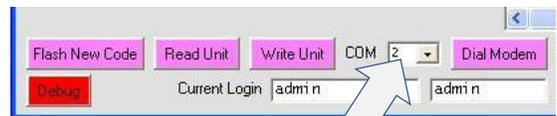
5. Click the **Flash New Code** button on the GUI Configuration Dashboard.

6. At the "Are You Sure?" prompt, click **YES.** A list of .hex files will appear. (Click the **Flash New Code** button again to cancel)

7. Click desired filename from the list. Flashing will begin immediately.

After flashing finishes, the GUI will switch to the **Terminal** screen and display the USR4204's main menu.

To Flash Firmware into a Remote USR4204

When the computer's COM port is assigned to a data communications device (e.g. analog modem) that can connect over a network to another data communications device at a remote location and interface thru a USR4204 to the console port of the remote target equipment (as illustrated in Figure 5), the GUI can use the same connectivity to manage the remotely-located USR4204.
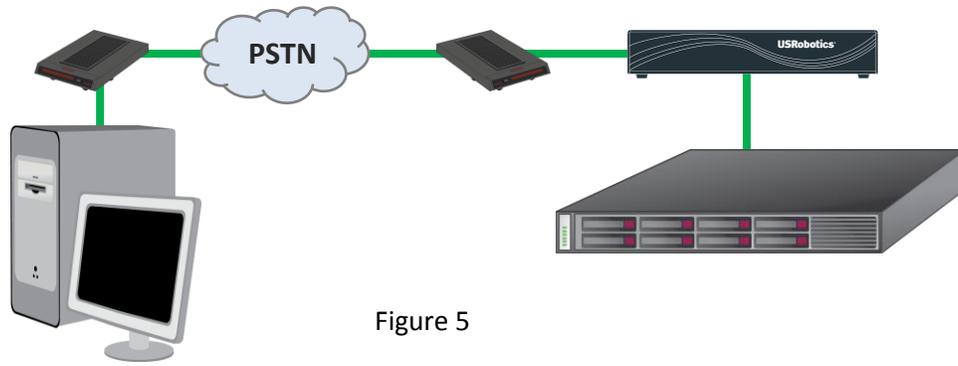
Figure 5

1. Launch the GUI application.

2. If security is enabled in the USR4204, enter a valid username and password into the GUI **Current Login** text boxes. The username and password are case-sensitive.

3. Every time the GUI launches, it automatically recalls the COM port number from the previous session. If necessary, use the **COM** pull-down box to select the COM port (1 through 16) that the computer's operating system assigned to the local modem.

4. Every time the GUI launches, it also recalls the dial string from the previous session. If necessary, enter into the **Dial Modem text box** a dial string that commands the local modem to connect to the remote modem.

5. Click the **Dial Modem** button. The GUI will send the dial string to the local modem. The local modem will dial the remote modem, connect, and the GUI will automatically login to the USR4204 and switch to the terminal screen to display the USR4204 Main Menu.

6. Click the **Terminal** button to return to the Configuration Dashboard.

Notice that the **Dial Modem** button has changed to a **Hang Up** button.

7. Click the **Flash New Code** button on the GUI Configuration
    Dashboard.

8. At the "Are You Sure?" prompt, click **YES.** A list of .hex files
    will appear. (Click the **Flash New Code** button again to cancel)

9. Click desired filename from the list. Flashing will begin immediately.
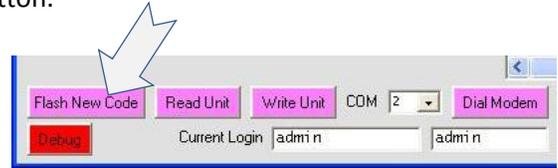
After flashing finishes, the GUI will switch to the Terminal screen and display the remote USR4204's main menu.

Disconnect from the Remote USR4204

From the Configuration Dashboard, click the **Hang Up** button.
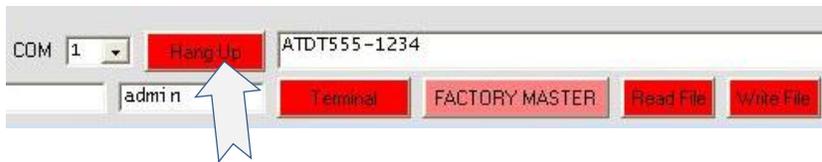
When the connection has ended, the **Hang Up** button changes back to a **Dial Modem** button.

The GUI does not support connections to packet networks that use IP addressing (e.g. LAN or cellular data networks). In that case consider using 3rd party modem emulation middleware in your Windows environment to translate the modem dial string and COM port into an IP address over TCP.

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