WiLoader Revision G

User's Manual

July 2017

Version 1.0

petunia tech

WiLoader

The WiFi Programmer for AVR

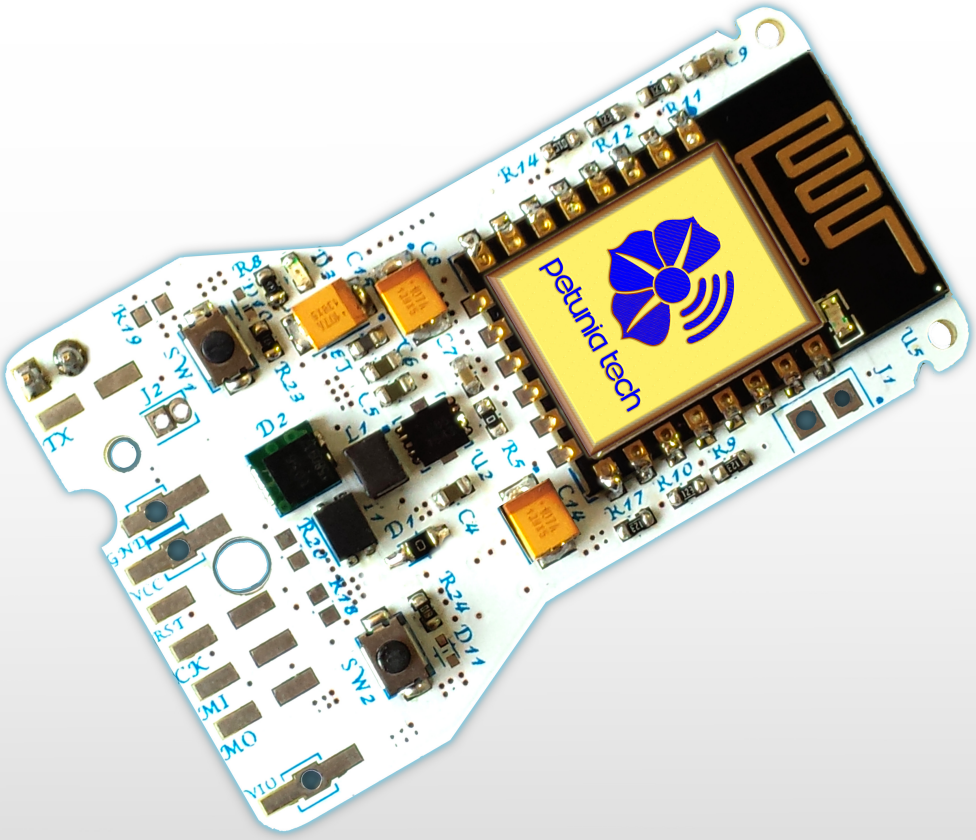


Table of Contents

Specs

Supply voltage: 3.3v to 5.5v

I/O voltage: 1.8v to 5.5v

Over-voltage protection: up to 20v

Current consumption:

Peak (packet transmit): 350 ~ 500 mA

Average (station mode): < 50 mA

(exact value: TBD)

Reverse-voltage protection

Over-current protection

Programming protocol:

AVR ISP (via SPI)

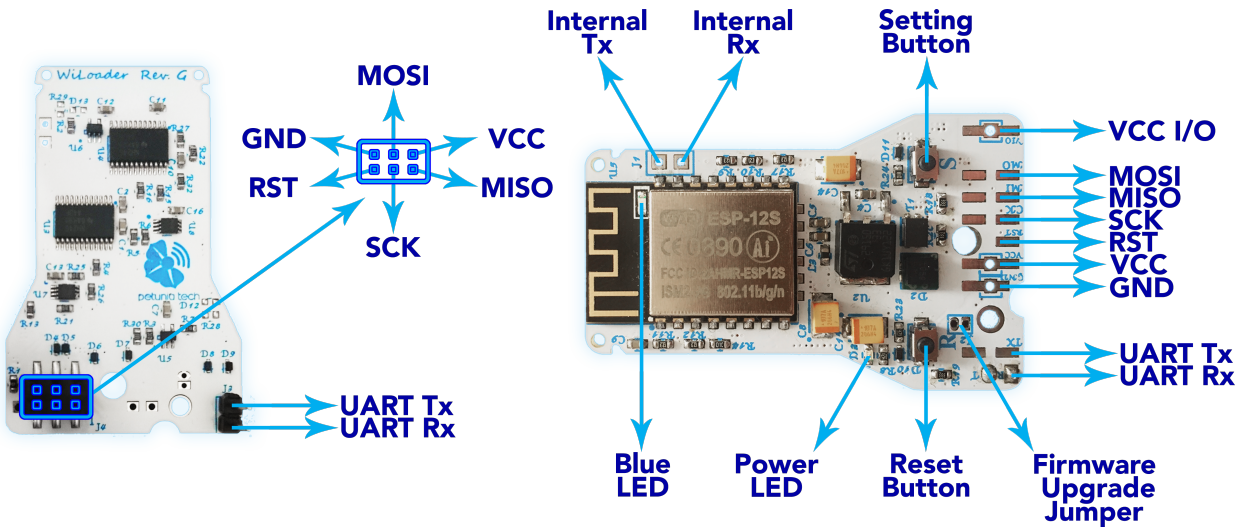
Optiboot boot-loader (Arduino Uno compatible)

STK500 boot-loader (Arduino Mega compatible)

WiFi-UART bridge Baud Rate:

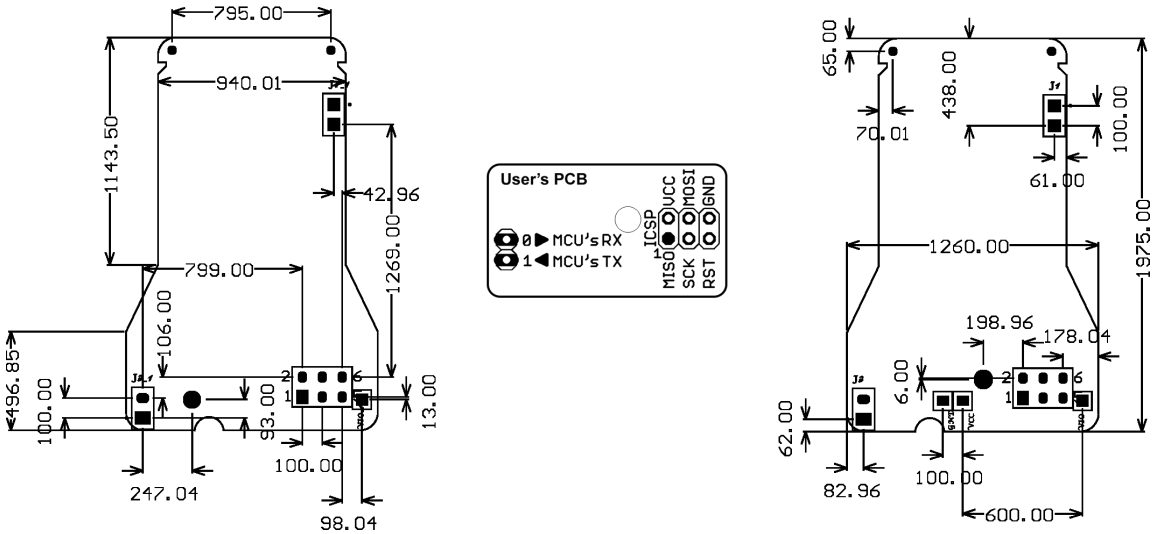
300 to 4,608,000 bps

Pinout



1) Dimensions are in milliinches (mil)

2) Holes: 2x 1.5mm, 1x 2mm, 1x 3.2mm



Hardware tips

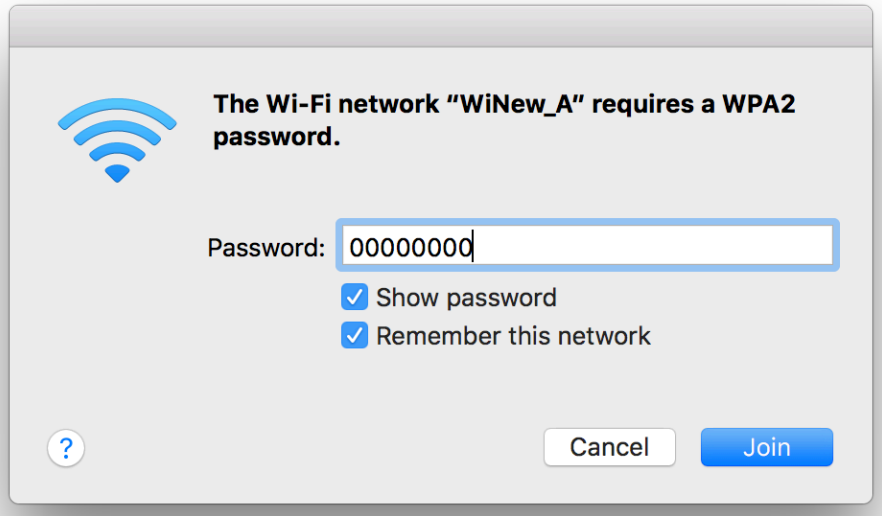
Normally, the supply voltage and VCCIO are connected by the R1 resistor. As a result, if the power supply voltage applied to the WiLoader is different from IO voltage of the MCU (for example, 3.3v as supply voltage and 1.8v for IO voltage), the user must disassemble the R1 resistor and supply VCCIO through the VIO pin which is on the right corner of WiLoader.

Note: In case of different VCCIO and power supply voltage, the VCCIO circuit in the WiLoader doesn't have over-voltage, reverse-voltage or over-current protections.

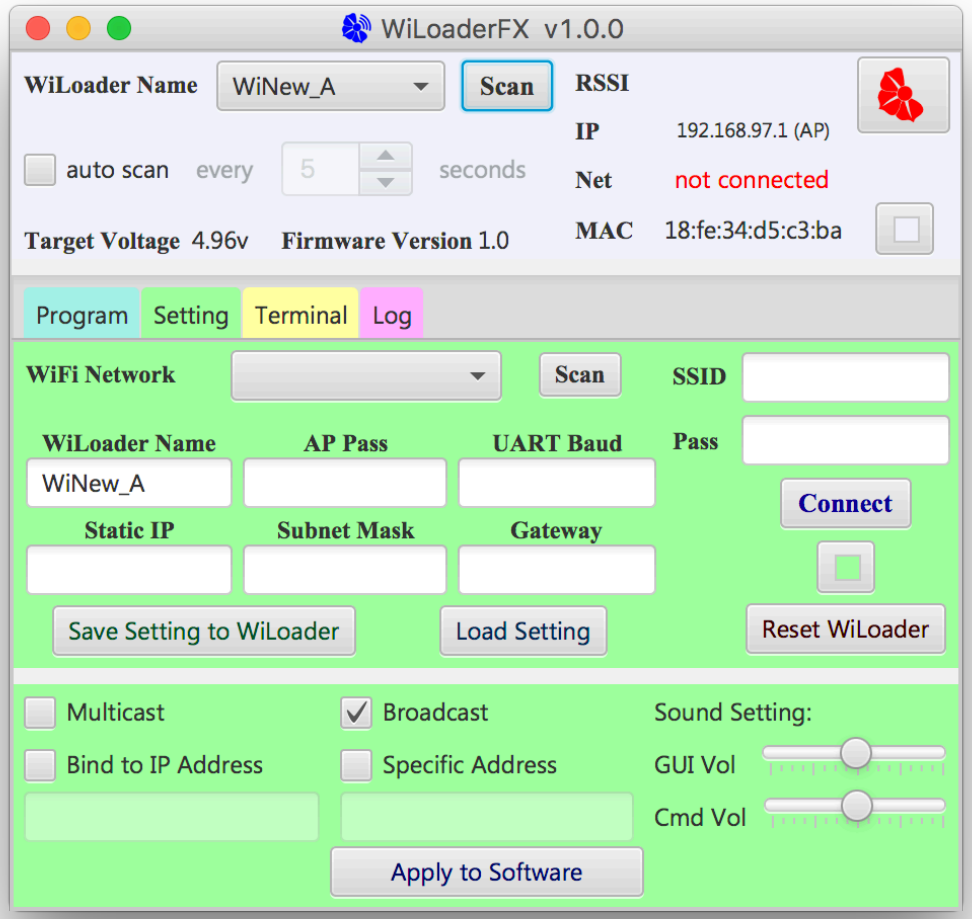
The MOSI, MISO, RXD, RESET pins inside WiLoader are connected to the level translator or buffer IC's input, so if they are not connected to the user's circuit (for example, the user only uses the WiLoader in boot loader or serial mode And does not use MISO and MOSI pins) These pins will be float and may add up to a few mA to total current consumption. Consequently, if the current consumption is of high importance, a 33 KOhms resistor can be used instead of each of the resistors R18 (MISO), R19 (RXD), R20 (Reset) and R31 (MOSI).

How to set up

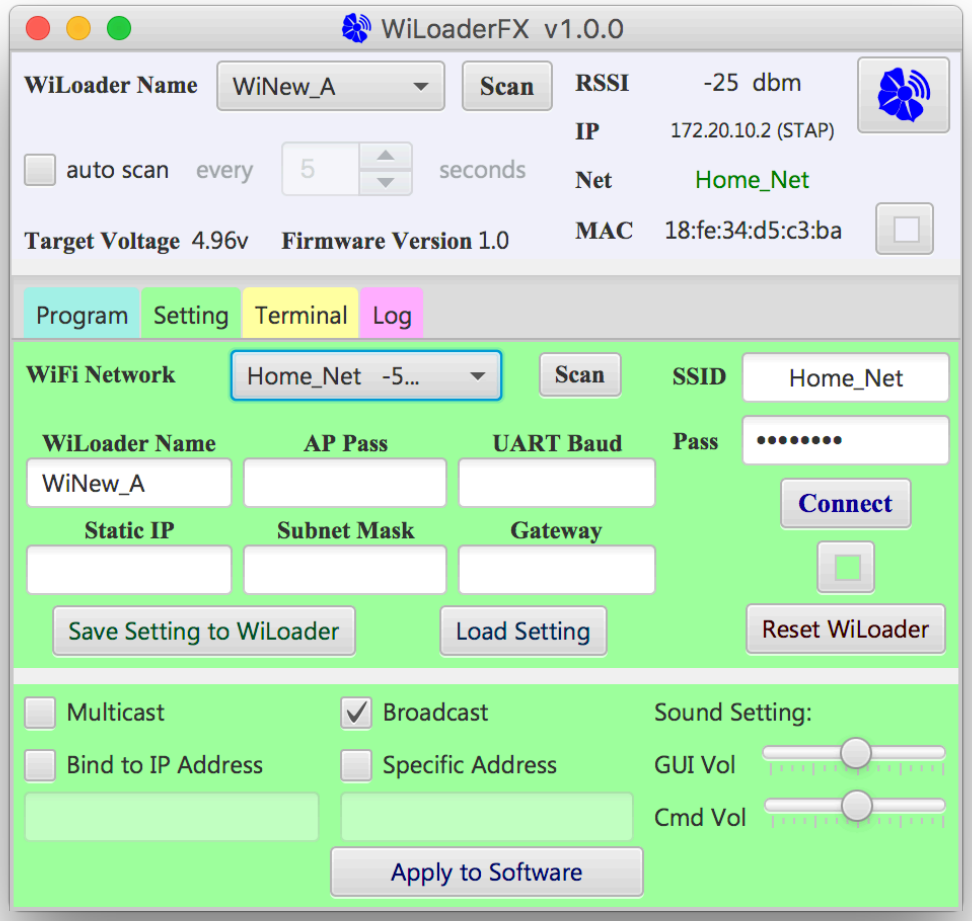
For connecting WiLoader to the preferred WiFi network, first attach the appropriate voltage to the power supply terminals. As a result, if WiLoader turns on the power LED (White LED) will light up. Next, press and hold the S button for at least 1 second. After releasing the button, WiLoader will go to Access Point mode and creates a Wi-Fi network, which is the same name as WiLoader itself. WiLoader's name should be WiNew_A, WiNew_B, WiNew_C or WiNew_D after production. (***Note:*** This name can be changed at any given time by user)



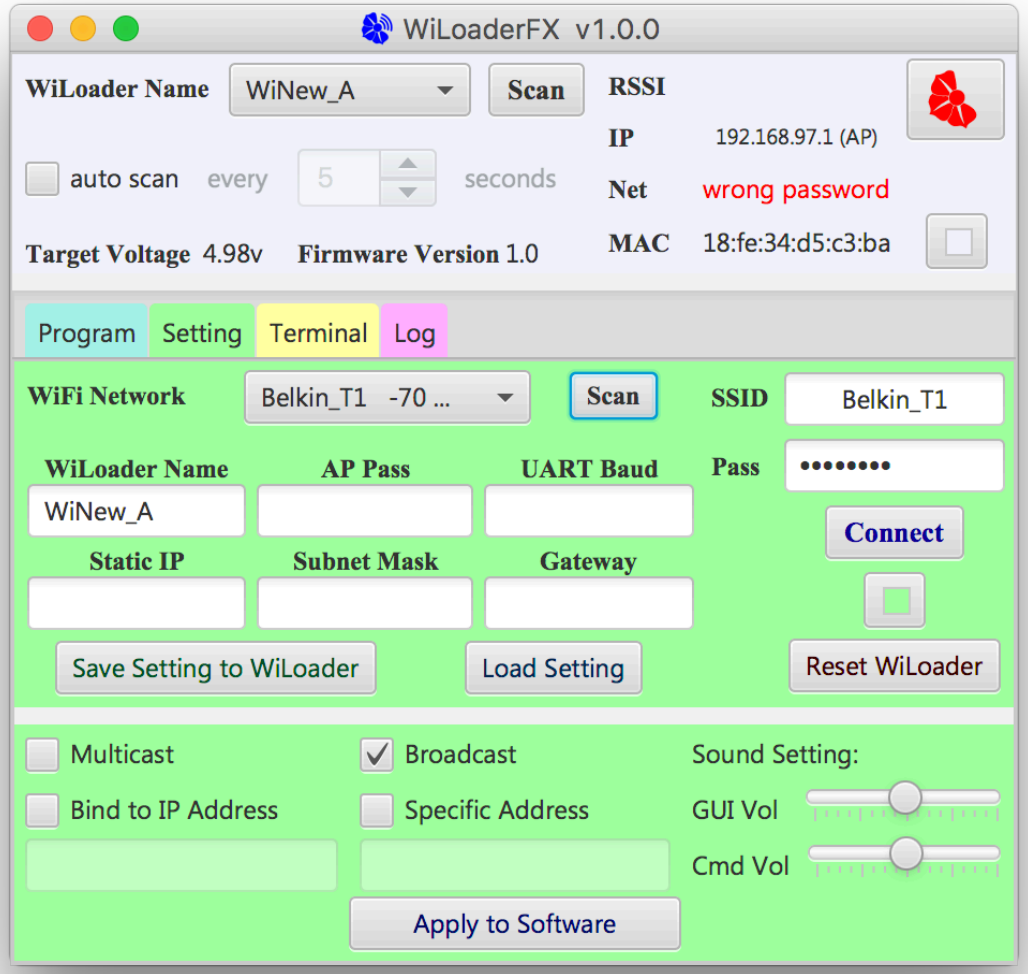
The original password of this network is set to eight consecutive zero digits(00000000), which can also be changed later. After connecting the computer to WiLoader's network, the user should run WiLoaderFX software. The software can be found in the bin directory or in case of macOS operating system the application is in the main folder. WiLoader name will be displayed in the software list by clicking the scan button inside WiLoaderFX. Then, by clicking scan button inside the Setting tab, it searches for existing networks and after a few seconds their names are displayed in the drop down list of WiFi networks. After selecting the desired network and entering the password, press connect button and shortly after WiLoader will connect to user's selected network.



If the network created by WiLoader and the user selected network both use the same WiFi channel, the network connection status will be displayed at the top right side of the software (opposite the Net label) during connection. Otherwise, due to the need for WiLoader WiFi channel to be identical in the AP and Station mode, WiLoader Network channel changes to the selected network channel and the user's computer will probably be disconnected from the network.



Additionally, if a successful connection is made to the chosen network, the blue LED on the board also lights up. Otherwise, if user's computer is disconnected from the network , the user can connect to WiLoader network again and click the WiLoader scan button to find out why the connection to the desired network has been unsuccessful. For example, if the password is incorrect, the phrase "wrong password" is displayed opposite the Net Label.



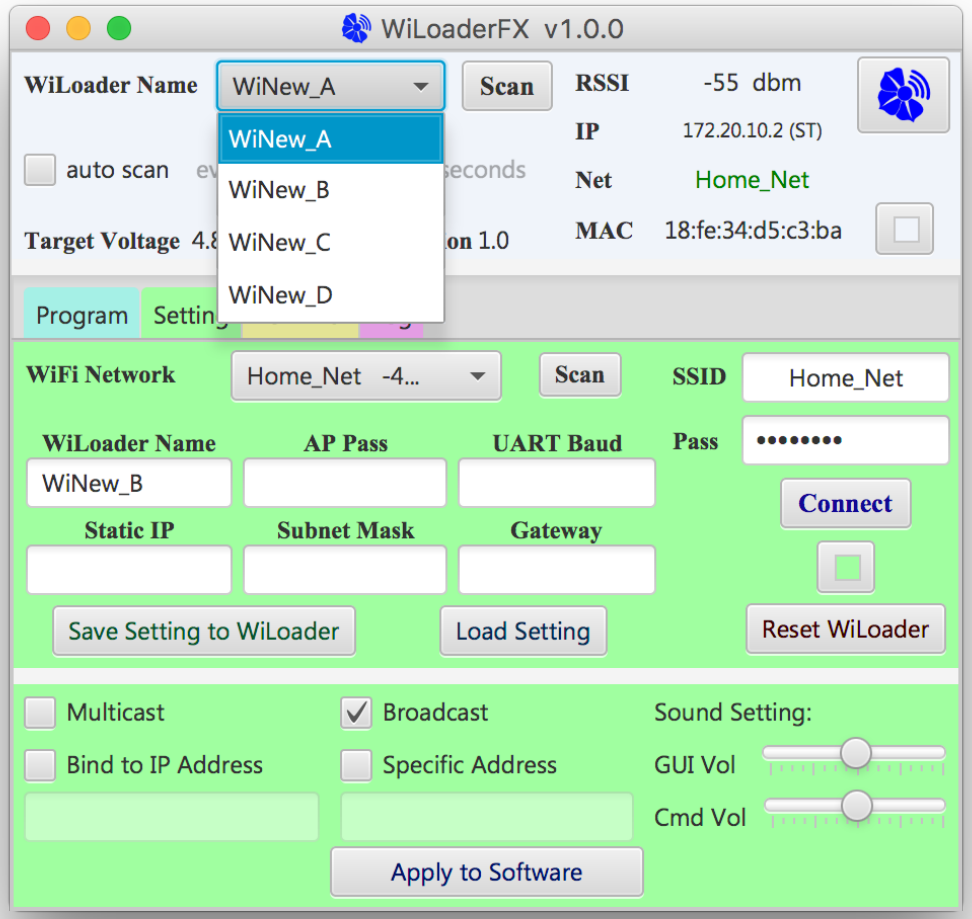
Note: After hitting the connect button, there is no need for pressing the “save setting to WiLoader" button or resetting the WiLoader. The network information is automatically stored in WiLoader and it will connect to the entered network after each turn on or reset by itself.

Note: If the network password entered is incorrect several times, even after entering the correct password WiLoader may not properly connect to the network, in which case, if the problem persists, reset the WiLoader. If the password is entered correctly, WiLoader will automatically connect to the specified network.

Note: There is also the option to setup WiLoader, using its smartphone application.

WiLoader Information

WiLoaderFX top section is dedicated to displaying WiLoaders found on user's computer network and their information. If there are more than one WiLoader available on the network, all of them will be added to drop down list and will be selectable by user.



In this section Target voltage shows WiLoader supply voltage and If VCC and VCCIO voltages are different, VCCIO will be displayed as well.

Note: The voltage shown may vary up to about 0.2v with the actual value and is not exact.

The number next to the Firmware Version shows the firmware version of the selected device.

The number opposite the RSSI shows the strength of the received signal by the WiLoader in the station mode. If this value is small, it indicates the weakness of the network coverage in the place where WiLoader is located. The image and color of logo will also vary according to the value of the RSSI.

The number in front of the MAC shows the MAC address in the station mode. Although the MAC address of the WiLoader is different in the AP and station mode, this number will always display WiLoader MAC address in station mode. This is useful for the situations where users want to activate MAC filter on their modem/router and needs to add WiLoader MAC address to the modem's/router's white list.

The text opposite the Net lab indicates the network connection status. Also, when connected to the network, it will display the network name in green.

The number in front of IP represents WiLoader's IP address. If the text in parentheses next to this number is AP, it states that the WiLoader is in AP mode and WiLoader station radio is not connected to any network . If the text is ST, it means that the device is in station mode, and if it is equal to STAP, it indicates that WiLoader is simultaneously in the AP mode and also connected to another network as a station, in which case the IP Displayed is WiLoader's station IP.

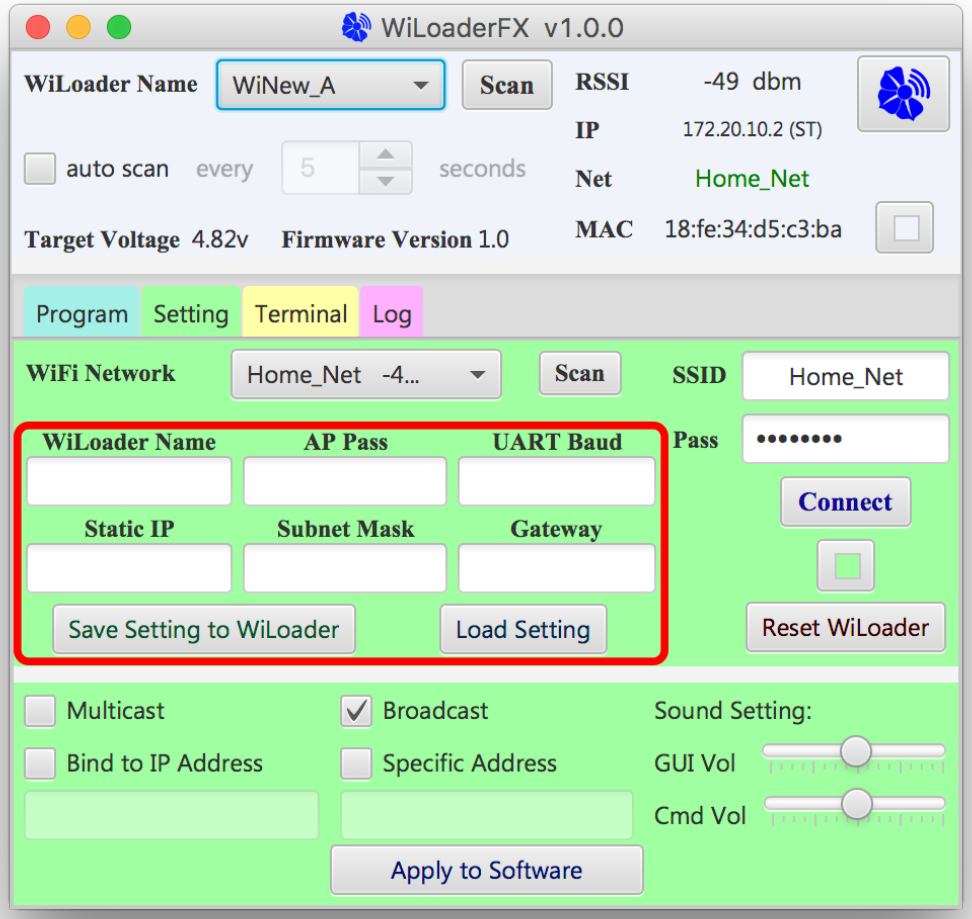
Note: In order to update WiLoader network information, either the scan button must be pressed each time user needs to renew the displayed information or the auto scan option must be activated.

Note: It is possible that few of available WiLoader in network will not appear in the drop down list each time a scan operation is performed. This happens on account of UDP packets loss in the network, which will be fixed by running the scan operation again.

Note: If, for example, 'WiNew_A' is selected in the list and there are more than one WiLoader available on network, the scan operation does not change the selected WiLoader unless user changes the selected one. Consequently, if a scan operation is performed and the default (previously selected) WiLoader data is not received, the default WiLoader will not be changed and the default selection will be displayed as blank, but the user can click on the drop down list at any given time and choose another as needed.

WiLoader Settings

The setting tab of WiLoaderFX should be used, in order to change the name, AP mode password, UART baud-rate or IP settings of WiLoader.

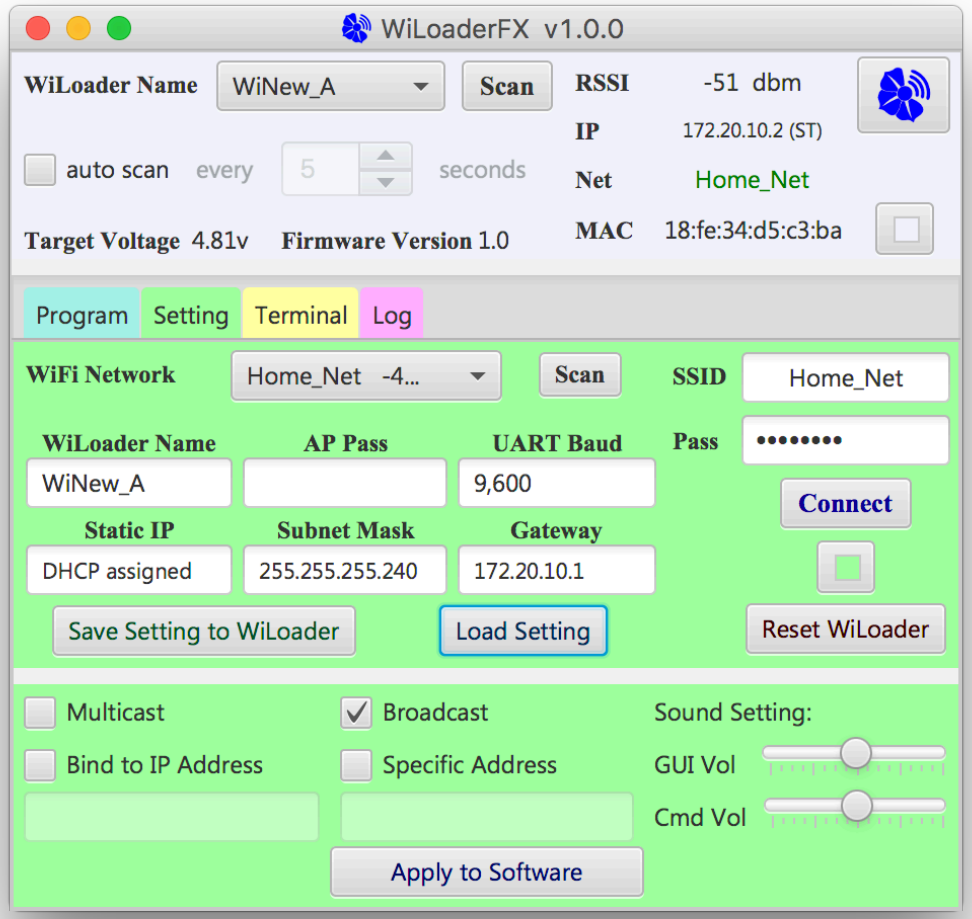


For receiving the latest setting applied to WiLoader, the 'load setting' button should be utilized. In 'WiLoader Name' field, the user can enter any arbitrary name (ASCII or unicode) up to a maximum of 32 bytes (32 ASCII characters or fewer if using Unicode characters).

Note: Given that the name of AP network and WiLoader are the same, if non-ASCII characters are used in its name, the network name in AP mode may not be displayed properly on some operating systems.

The AP password should not be longer than 64 bytes, also non-ASCII characters can be included in the password.

Initially, the UART port is active and its speed is set to 115,200, to change this speed, the number can be entered to a maximum value of 4,608,000. The user can enter 0 or the word 'disable' for disabling the UART port.

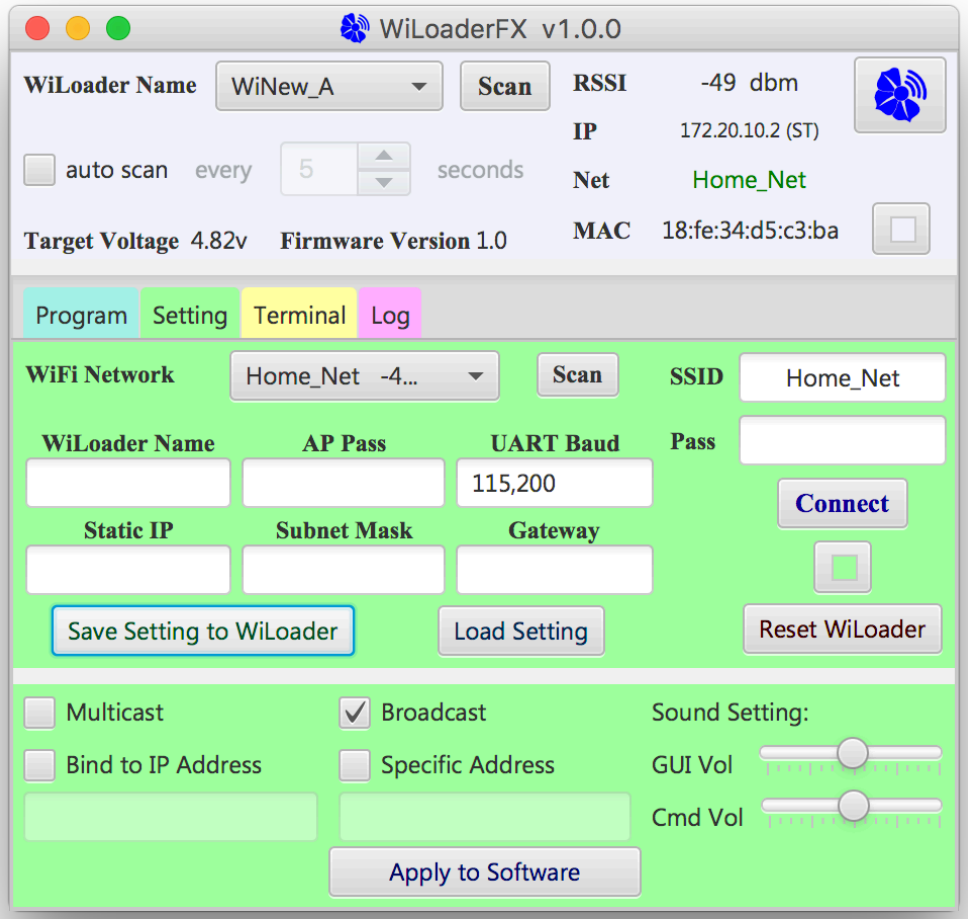


Note: If the UART port is deactivated, the Rx and Tx pins on WiLoader will go to TriState or Hi-Z, when programming operation is not running.

By default, WiLoader's IP is set to DHCP mode and it receives the IP address from DHCP server of the selected network. However, if the user wants to have a static IP address, the address should be entered in the appropriate IPv4 format. In this case, it is also necessary to fill the subnet mask and gateway fields.

If the user has already set WiLoader's IP address as static and wants to change it back to DHCP mode, the word 'DHCP' should be entered in Static IP field. In this case, no subnet mask or gateway are required.

After entering or changing WiLoader's setting, in order to save them properly the 'save setting to WiLoader ' button must be pressed and after receiving the successful operation message, for applying these new setting to WiLoader, reset the device using 'Reset WiLoader' button in the software or by pressing the R button on WiLoader itself.



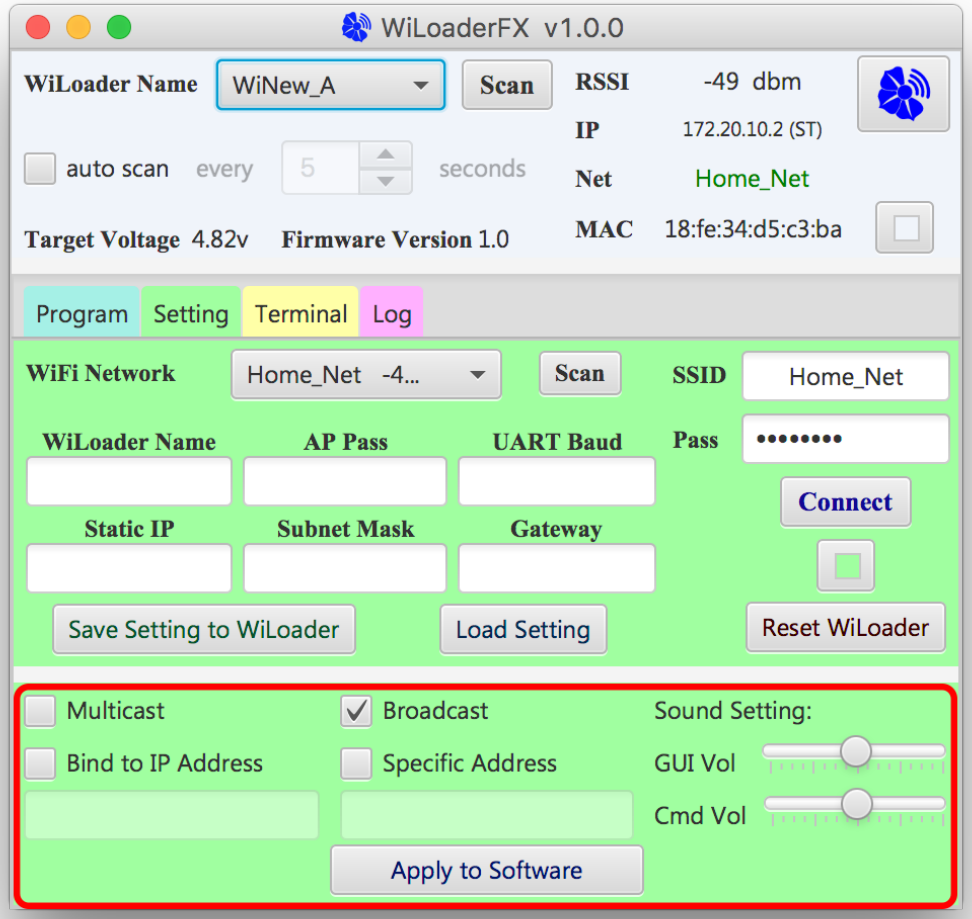
Note: In order to change only a particular parameter from the ones described before (for example, only the UART baud rate), the user can leave rest of the fields available blank. In this case, only the filled parameters will be updated.

Note: It is possible to change WiLoader's settings either in station or AP mode. When WiLoader is in AP mode, as stated before for applying the settings, WiLoader should be reset and as a result its AP network will be gone, so in order to re-create its network, the S button on WiLoader should be pressed for 1 second.

Note: If the static IP option is used, the speed of the connection to the network will be much higher than the DHCP mode.

WiLoaderFX Software Settings

In order to adjust the software parameters, use the options available in the bottom section of setting tab.

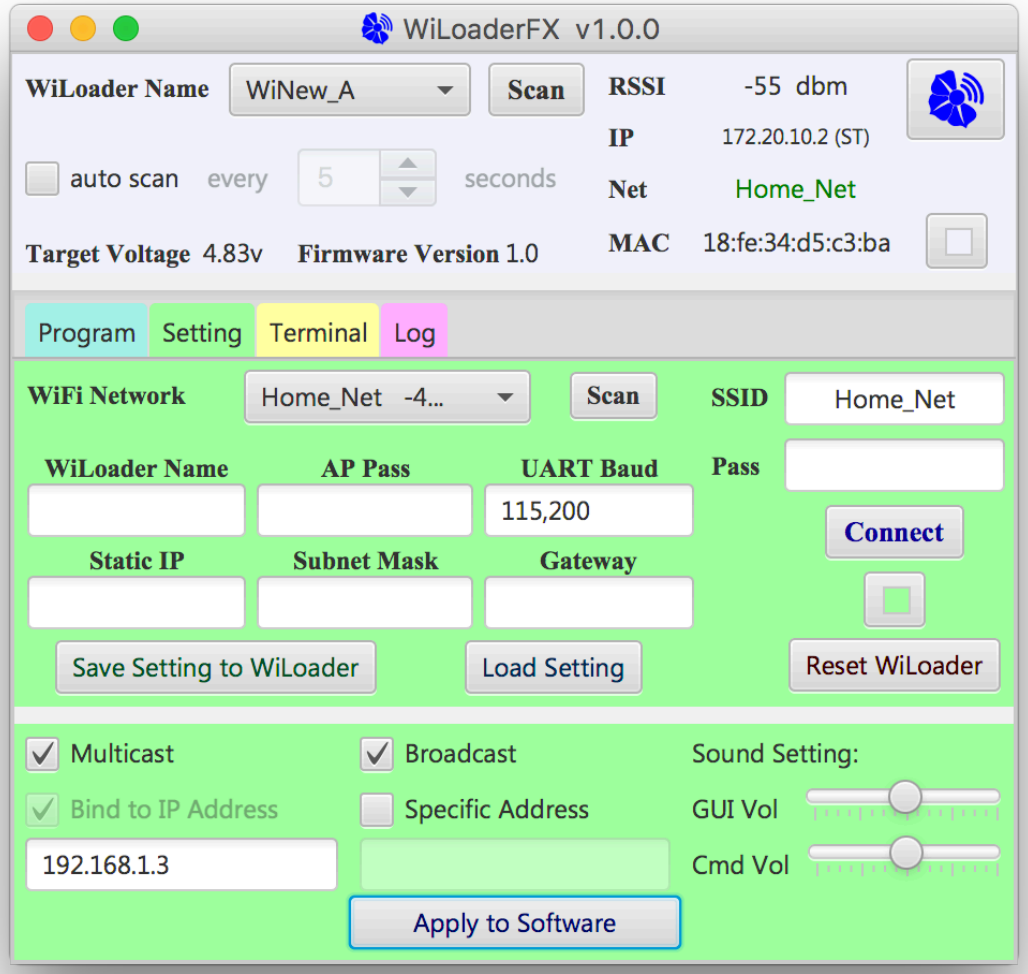


These settings are stored in wiloader.conf file in the etc directory and are loaded and applied every time at the beginning of the software run.

Broadcast option is enabled by default. In order to find WiLoader on the network, the software sends packets by the UDP protocol to the local network broadcast address. For example, a network with “192.168.1.1” gateway and “255.255.255.0” subnet will have a broadcast address of “192.168.1.255”.

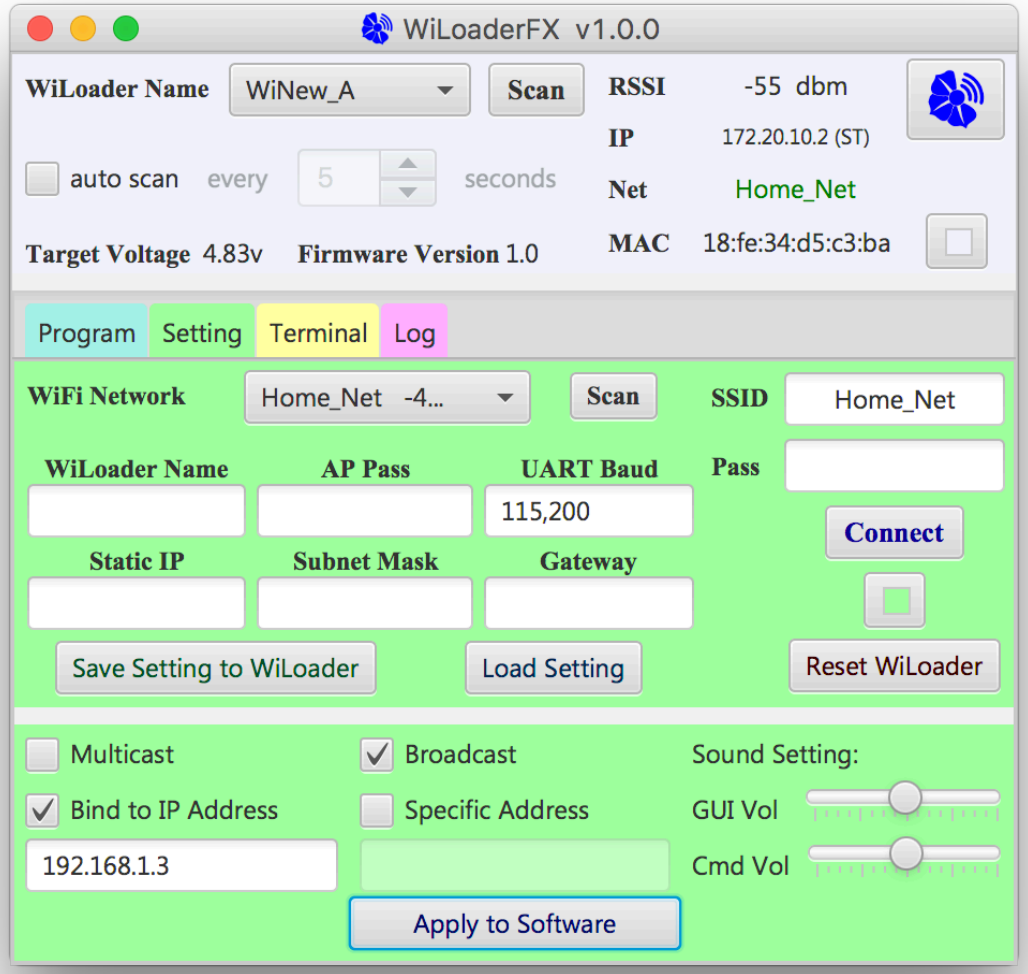
On some routers, the local broadcast address may be blocked, so the multicast option can be used to find WiLoader using WiLoaderFX. In multicast mode, importing an IP to bind is also necessary. This IP is in fact the IP of user's computer received from the network, and if the user enter this address incorrectly an error massage will be displayed automatically. It's important to note that the IP address of user's computer may change after disconnecting and reconnecting to the network, as result this address must be updated by the user each time.

For example, if user's computer has received the 192.168.1.3 address from the network, In order to use Multicast, the user must apply the settings as shown in the image below.

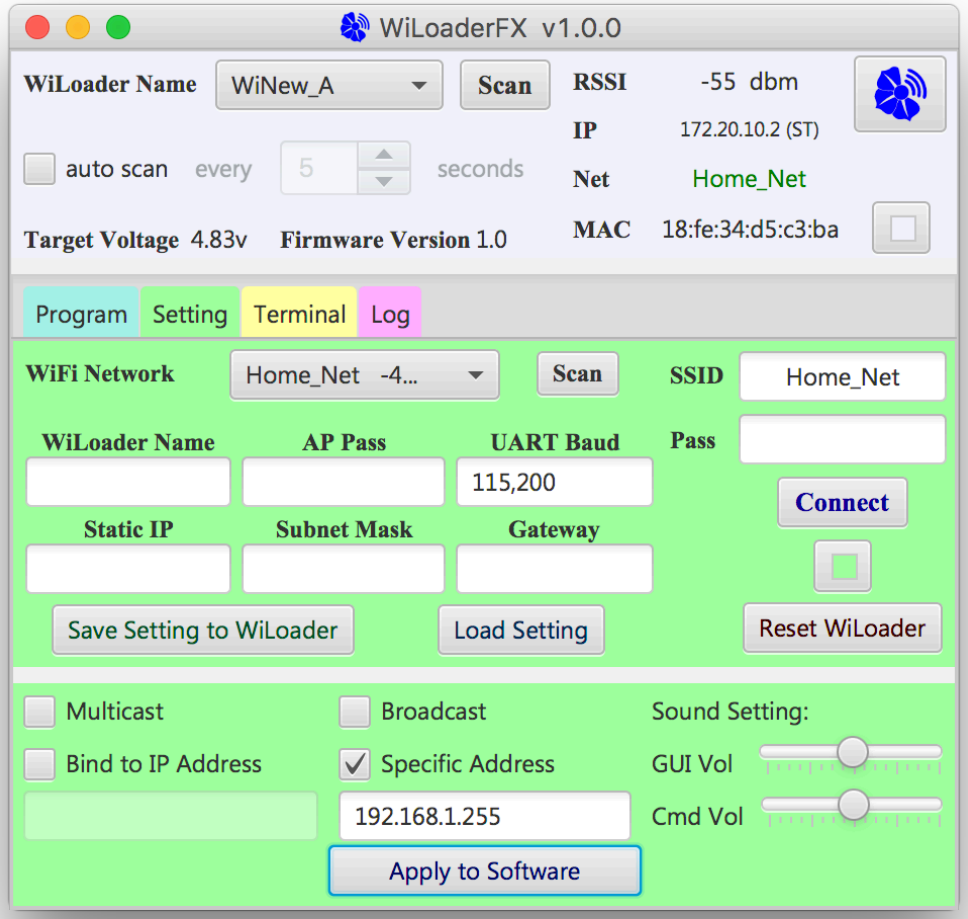


Only using the Bind to IP Address option is also possible. In case, where users have several active network cards on their computer and want to send packets only through one of these cards, they can enter the IP address of the desired network card in this field.

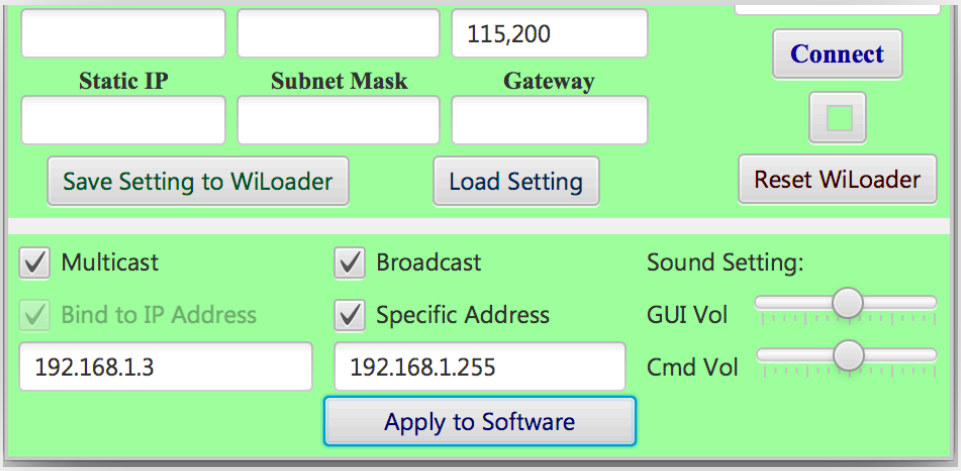
Note: In Broadcast mode, the software automatically sends the discovery packet to all active interfaces on the computer. In order to avoid this operation and send the packet only by one of these interfaces or network cards, the Bind to IP Address option can be employed.



If user needs to scan a specific IP for finding WiLoader, it can be entered in “specific address” field. For example, if the user runs the software on virtual platforms such as virtual box or etc, and have set its IP settings on NAT, the external network broadcast IP can be obtained and entered in “specific address” field.(the internal network broadcast IP of virtual operating system is different from external network broadcast IP)



Note: Simultaneous use of all the described options before is also possible as shown below:



In this case, the application sends the discovery packets to the multicast address, broadcast address and also the specified address (192.168.1.255) through the Interface or the network card with the IP address that is entered in “Bind to IP Address” field .

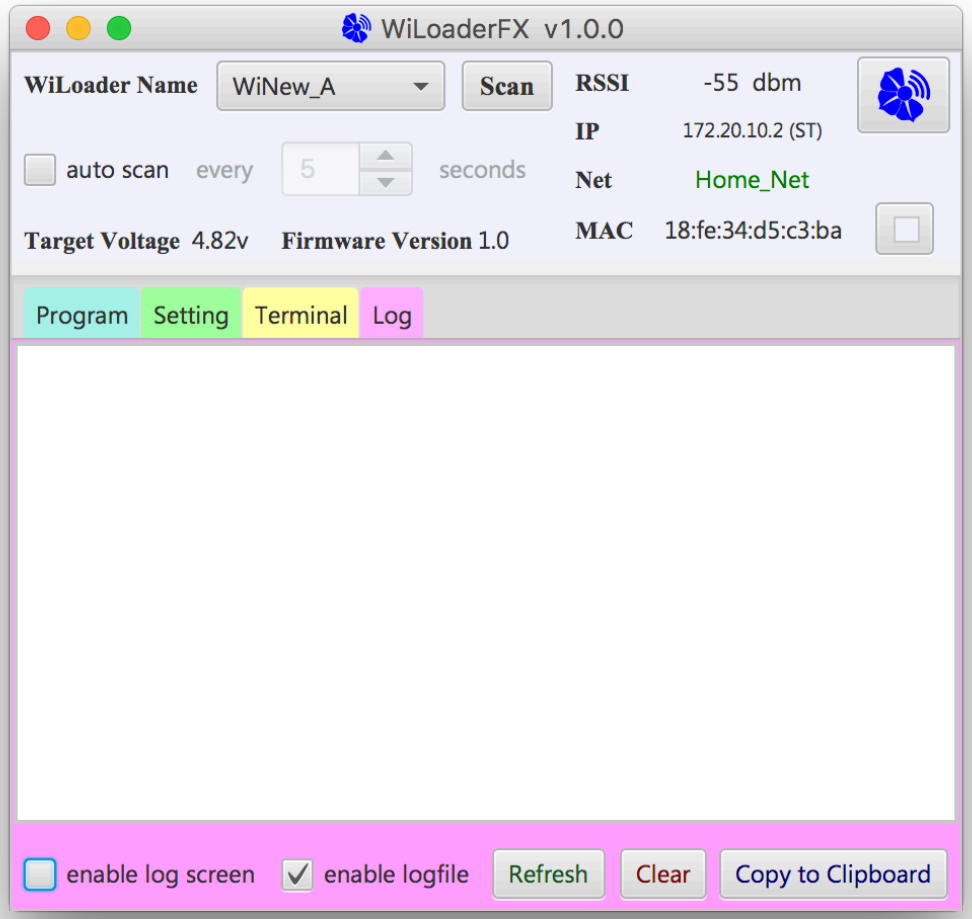
The volume of the software alert sound can be adjusted in the sound setting section. Sounds that are played when the user is working with GUI are controlled by the GUI Vol and the ones played when using the command line interface (for example, working with Arduino software and other IDEs such as Ateml Studio) are adjustable by Cmd Vol.

Note: After entering the desired settings, in order to apply and save them inside wiloader.conf file, the user must click the “Apply to Software” button. If the format of the entered IPs is incorrect and so an error message is displayed, the settings will not be applied and saved.

Note: If the bind to ip error is displayed, the software will continue to work only in Broadcast mode until the correct settings are applied by the user.

WiLoaderFX Log Tab

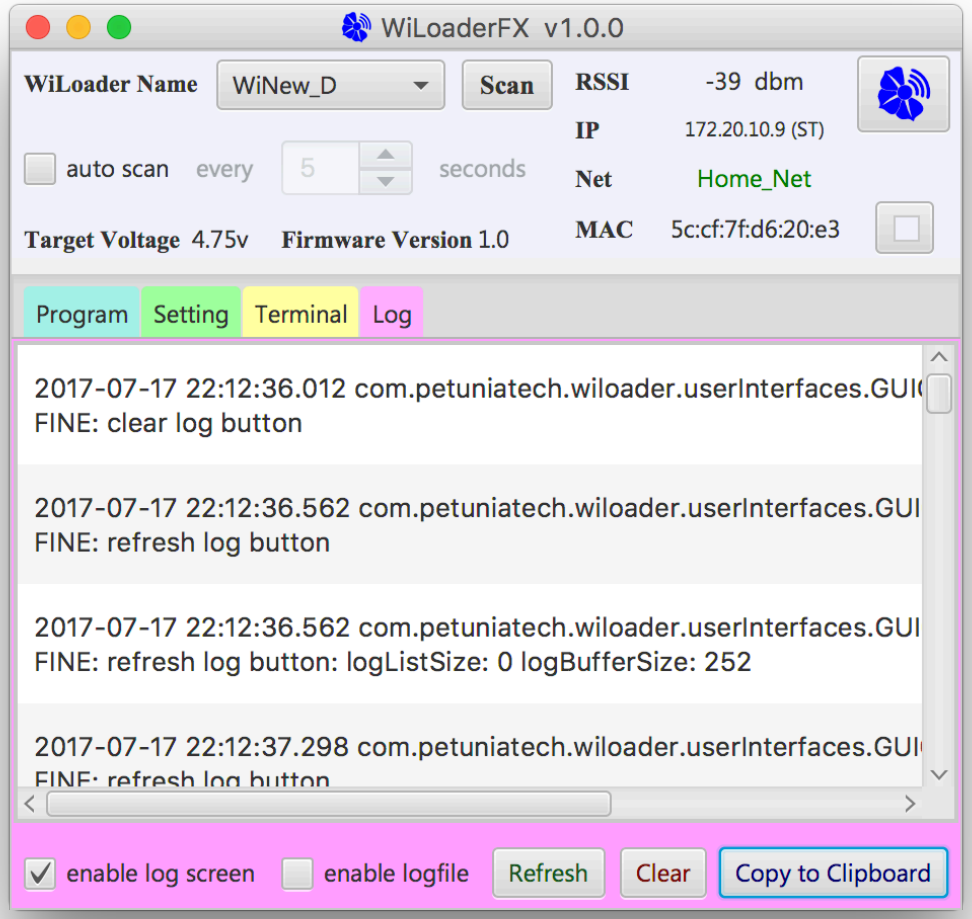
In order to save the details of software performance and troubleshooting its problems a log tab has been provided. In the event of recurring problems with the functionality of software by activating the option to save the log in a file or displaying it in software's GUI , the user can



submit a detailed report of software issues to the WiLoader Technical Team.

In case, logfile option is enabled, log messages will be stored in several files in etc directory.

In the event that log screen option is enabled, the user should press the Refresh button to display the reports and then use the "copy to clipboard" button for copying them to an external file.



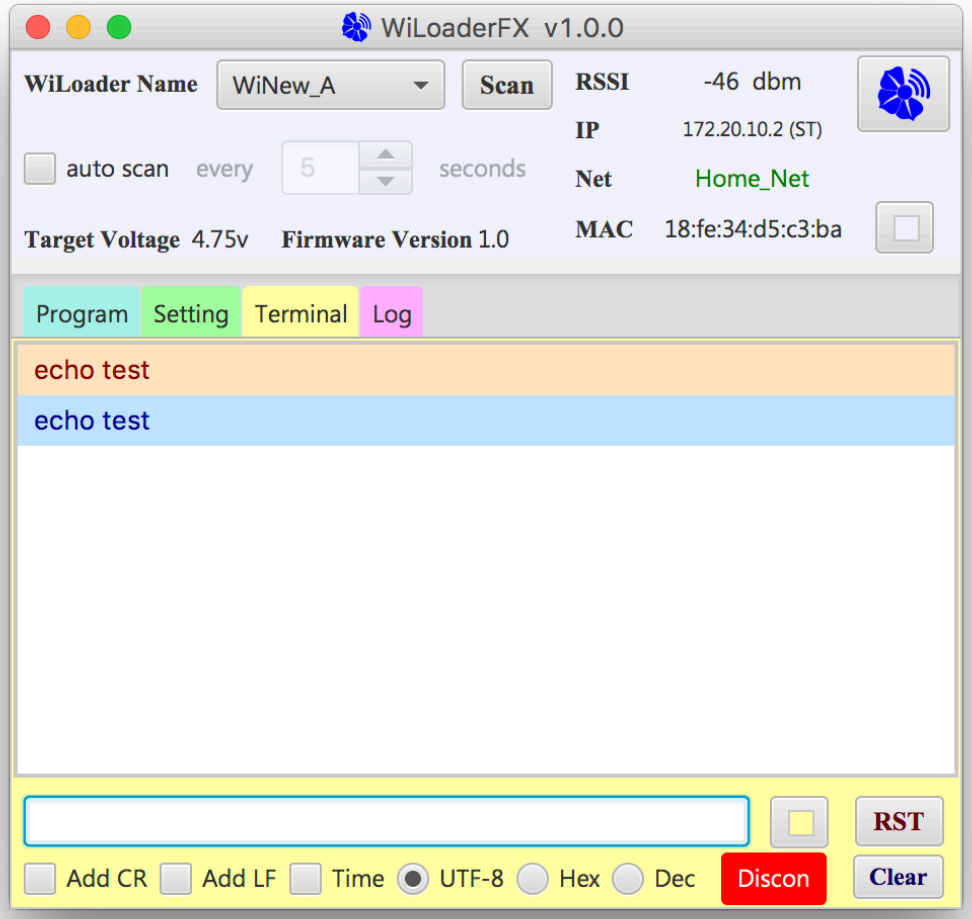
Note: Due to the fact that the log screen option will save up to 50 MB of log files, employing this method increases the amount of RAM consumed by the software, so it is recommended to use it for short operation and in other cases make use of the logfile option.

Note: Enabling any of the log options will be saved in the configuration file and as result after starting the software the next time, the log process will start again. It is therefore suggested that the log options be disabled after completing the test and logging process.

Note: When the log option is enabled, the operation speed of the software will be slightly reduced.

WiLoaderFX Terminal Tab

In order to utilize the WiFi-UART Bridge feature, the user can use the terminal tab or other network data-transmission softwares (such as “socket test” software).



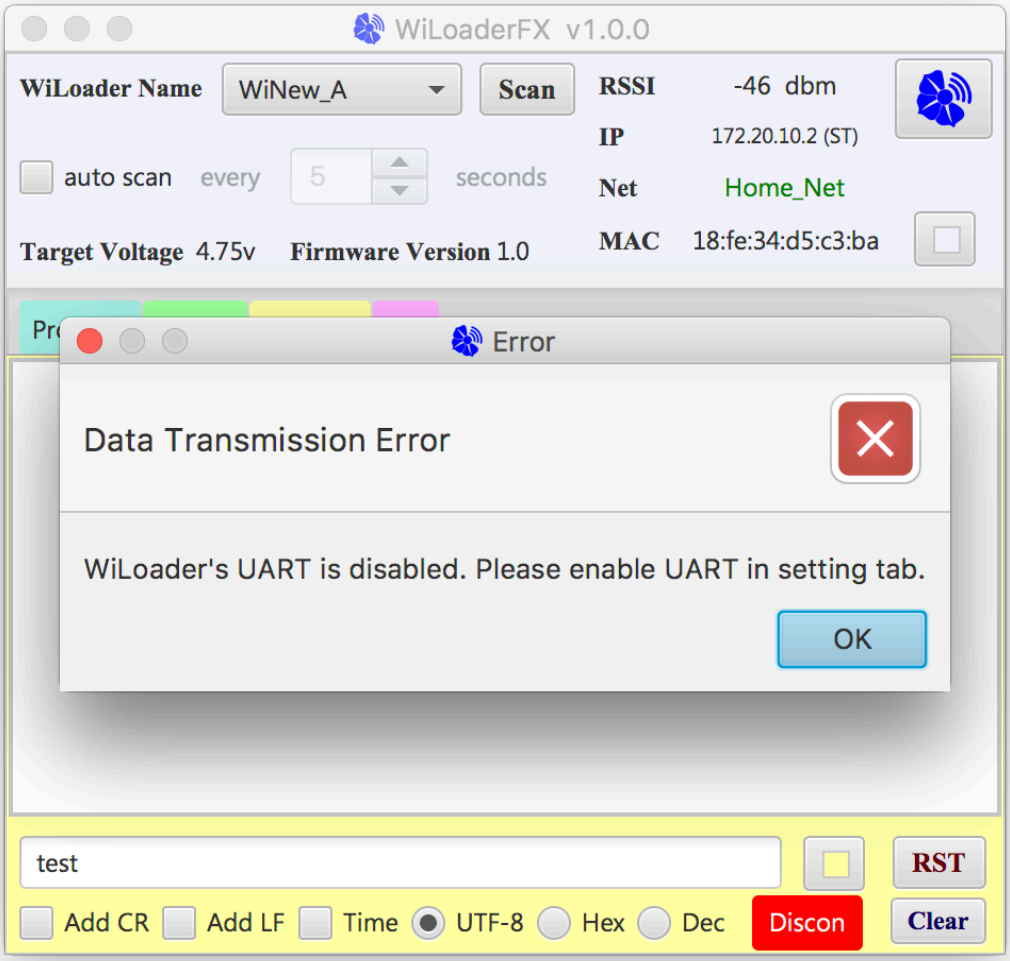
The user must first select the desired WiLoader from the drop down list and then click the connect button on the bottom of the page, in order to send and receive data on WiLoader’s serial port. If successful, the button will turn red and the text will become “Discon". For sending data, the following formats can be employed: UTF-8 (for sending data as Unicode), Hex string, and ASCII string.

In case of hex and ASCII formats, bytes in the desired string must be separated by space. For example:
Hex: 1f 45 8 F4
Decimal: 234 12 0 4
Entering negative numbers or values larger than 255 is not permitted.

When the user selects the options “add CR” or “Add LF,” 0x0D or 0x0A byte will be added at the end of data string that are consecutively the characters for Carriage return and Line feed.

The user must use the Enter key, in order to send the written data. The clear button is used for clearing the terminal screen and the reset button is for resetting the MCU, which is usually used to carry out tests in projects along with sending and receiving serial data.

It’s important to note that up to 5 simultaneous terminals can also be connected to WiLoader. For example, if the user works with Arduino Serial Monitor and Smartphone application Terminal, there is no problem in connecting multiple users to WiLoader’s serial port. In this case, the received bytes from the MCU’s UART port, will be sent to the last client connected to WiLoader or the last one that sent any data to WiLoader.



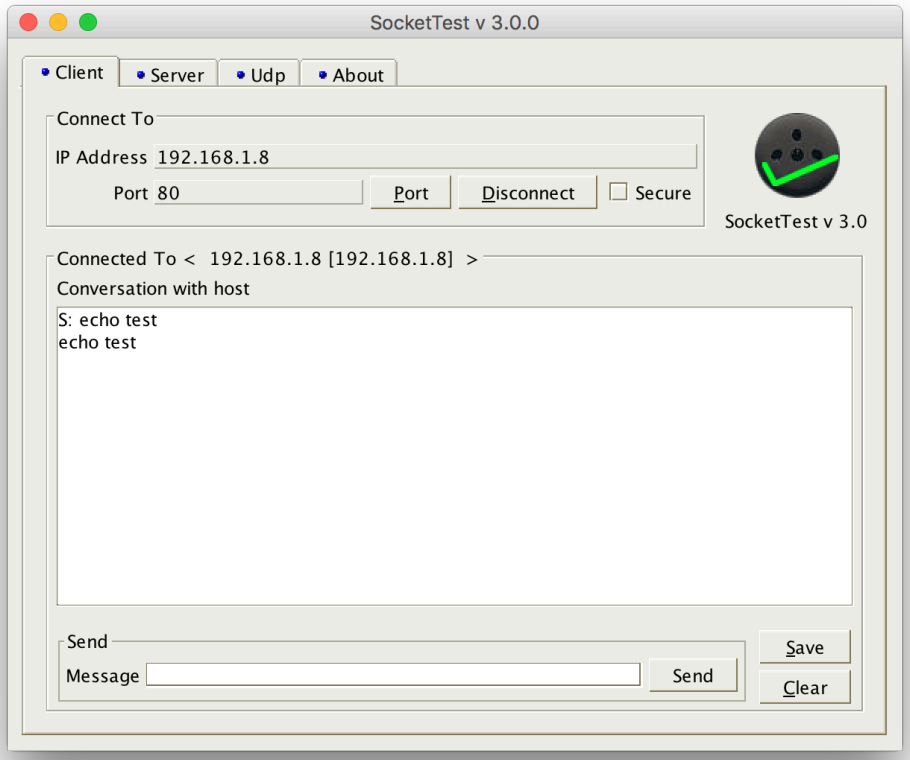
Each time the target board and as a consequence, WiLoader will be turned off and on, all the established connections will be lost, so the user should initiate and establish all the connections again.

In order to inform the user, whether data sent from the terminal has been received by WiLoader, an Acknowledgment (Ack) mechanism has been provided. This mechanism enables the user to know if the connection has been lost and WiLoader hasn't received the sent bytes. The Ack mechanism does not exist for bytes sent by MCU to WiLoader, so the MCU can't be certain that its sent data has been received by the computer or smartphone software.

Also, given that boot-loaders also use the serial port, while using a boot-loader the user can't send serial data from the terminal and is going to encounter an error message displayed by WiLoaderFX.

Also, if the UART port has already been disabled by the user from the setting tab, the data sent from the MCU to WiLoader will not be sent to the computer, and if the information is sent from the terminal tab, the user will encounter an error message and the bytes will not be sent to MCU.

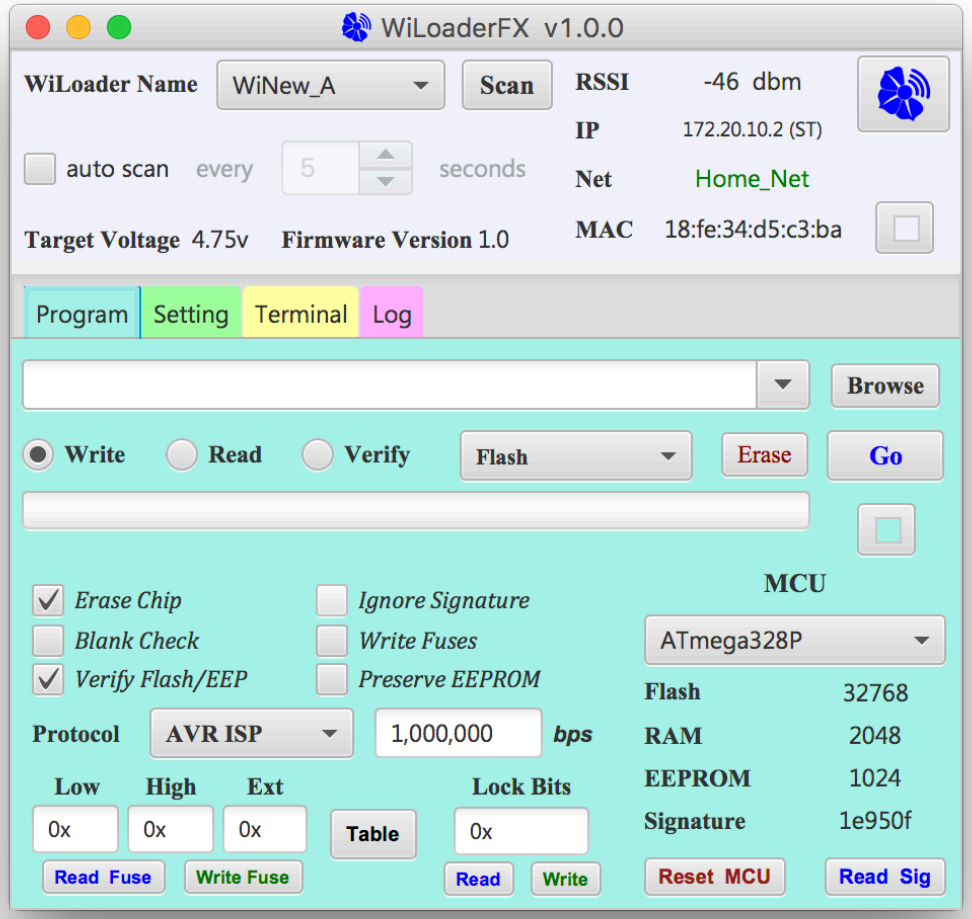
In order to use other network communication softwares such as SocketTest for sending and receiving serial data by WiLoader's UART port, the user must enter the correct IP address and port number. The IP can be obtained from the upper section of WiLoaderFX software and the port must be set to 80.



Note: When using other software for communicating with WiLoader's UART, naturally there will be no way to use the Ack mechanism, and the user will need to manage packets received by WiLoader.(For example, by adding the Ack mechanism at software level)

WiLoaderFX Programming Tab

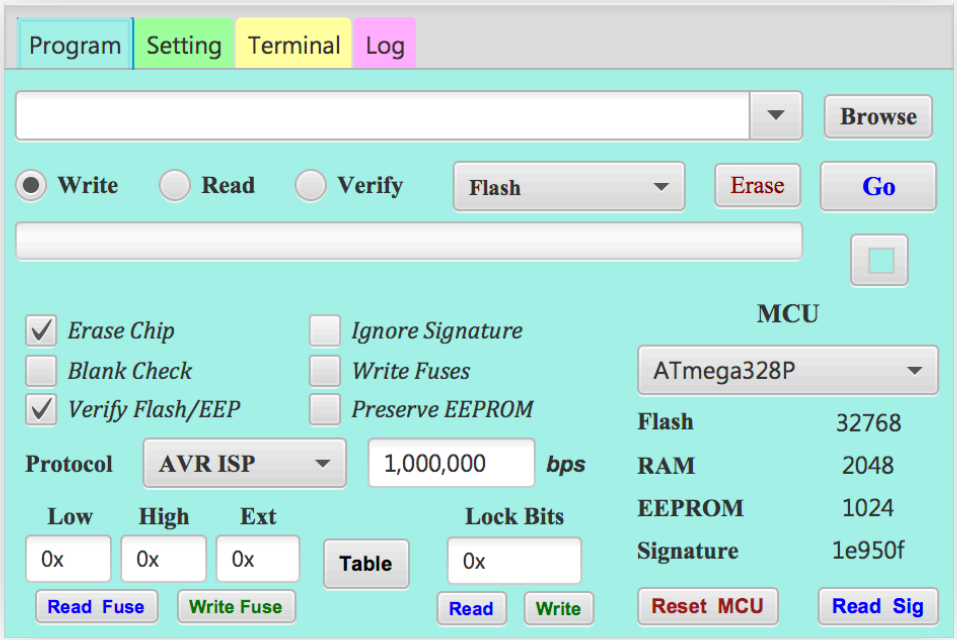
This is the main section of WiLoaderFX that is employed by the user, when utilizing GUI interface.



The user can select the type of memory he or she wants to perform the operation on (Flash or EEPROM), as well as the type of operation (Write, Read, Verify). The protocol must also be selected to perform the selected operation. If the AVR ISP is selected, the ISP protocol will be used with the SPI port. The Optiboot protocol for the Arduino Uno boards and the stk500v2 protocol for the Arduino Mega boards can be used, when boot-loader is burned on them.

Furthermore, users who do not use the Arduino boards, but need to use a boot-loader in order to release MCU's SPI pins, can download the compatible boot-loader hex files with the two boot-loader mentioned before and program them on their boards. From now on, they can use the reset, RXD and TXD pins for programming the MCU with boot-loaders.

The MCU's type is selectable from the list of MCUs. Also using the "Read Sig" button, the software reads MCU's signature via WiLoader and automatically selects the correct MCU.



The Erase button clears the memory when the flash memory is selected, and if EEPROM memory is selected, it will write 0xFF all through this memory.

When the Preserve EEPROM option is selected, the contents of the EEPROM will be buffered during the Chip Erase operation and afterwards will be written again.

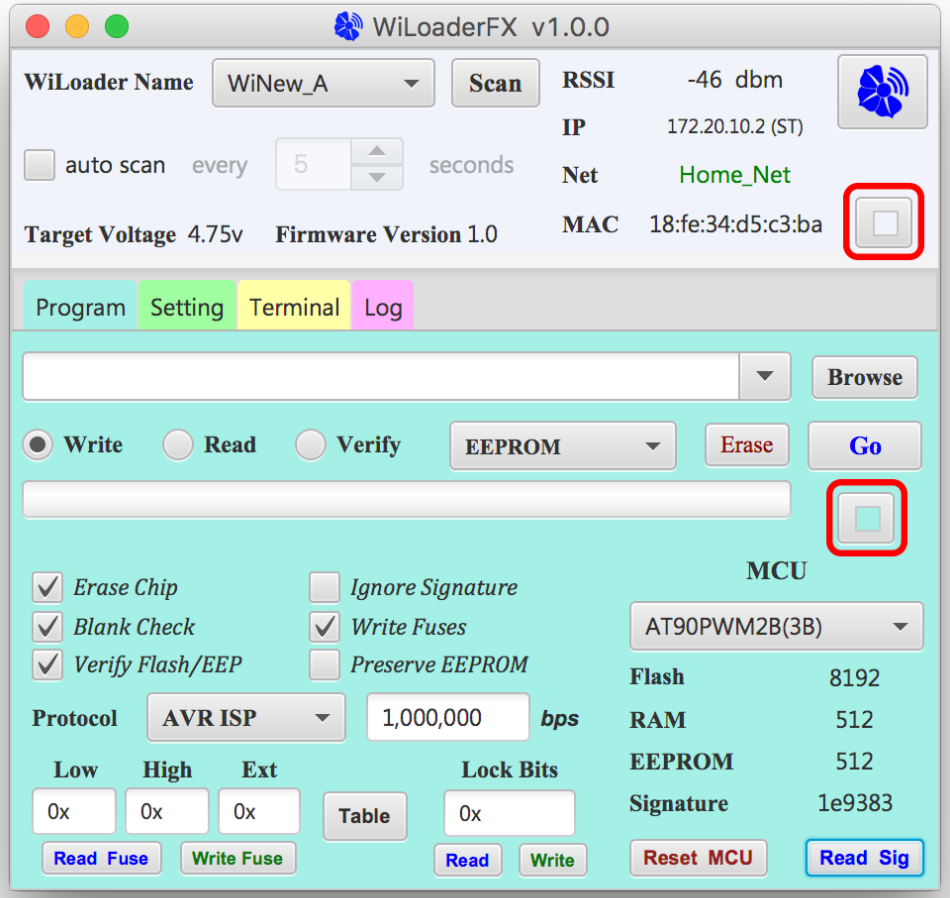
The Table button opens the website page with the address http://www.engbedded.com/fusecalc to help the user select the fuse bytes and the user can get the desired value of fuse bytes by selecting the MCU and choosing the needed options.

Note: The verify operation is page wise and will work like a write flash operation. Thus, if the hex file selected does not contain all the contents of a page from flash, the remaining bytes should be 0xFF for the verify operation to completed successfully.

Note: The .eep file is exactly in the same format as intel hex files and is therefore treated by the software as a hex file.

Note: In the read operation, the memory content will eventually be written by the software on the user-selected file. If the file or path itself does not exist, the software will create both the path and the file itself. If the address is given relatively, it should be relative to the location of the executable file WiLoaderFX. For example, if the user only writes sample.hex in the address field, through out the read operation, a file with this name and the intel hex format will be created along with the WiLoaderFX file in the bin folder. When using the Arduino patch, the bin folder is located on the hardware / tools / avr / bin path and the WiLoaderFX file has been copied by the patch software in that location.

The user can use the indicated button in the image below for changing the color of that section or tab.



Note: The color of different windows and tabs, as well as the path of the 10 last used files and also the last used micro-controller will be stored in the configuration file. These informations will be restored every time the software is launched.

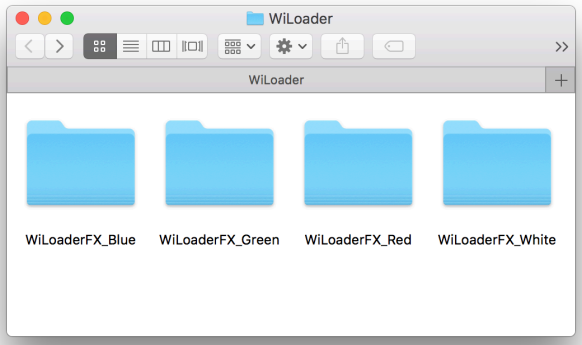
Note: The clock frequency in the AVR ISP protocol should be selected according to the MCU's data sheet. This value can usually be up to a quarter (and sometimes only up to one-sixth) of the micro-controller's frequency. For example, if a 16 MHz crystal is being used, this value can be increased to 4 Mbps. The boot-loader's frequency should be the same as the value specified inside the boot-loader's source code.

Note: The user can add other MCUs that support AVR ISP protocol to the drop down list. In order to add a new MCU, the user should open "etc" folder inside WiLoaderFX directory. Inside etc folder, there is a file with the name "wiloader-mcus.xml". After opening the file, new MCUs can be added by following the methods used for the exiting MCUs. (In macOS instead of opening WiLoaderFX folder, user should right click on the app and choose "show package contents")

Application in Mass-Production

The user can program multiple MCU's simultaneously using multiple WiLoaders. This application is suitable for mass programming in the production lines.

For this purpose, the entire software folder (WiLoaderFX) should be duplicated for as many times as needed (for example 4), and opened from the bin folder inside each one separately.



Given that the software uses the wiloader.conf file in the etc folder that is alongside the bin folder, the user should not create multiple instances of the WiLoaderFX by clicking on the same executable file many times.

In order to differentiate the windows from one another, the user can customize the background color of each WiLoaderFX instance independently.

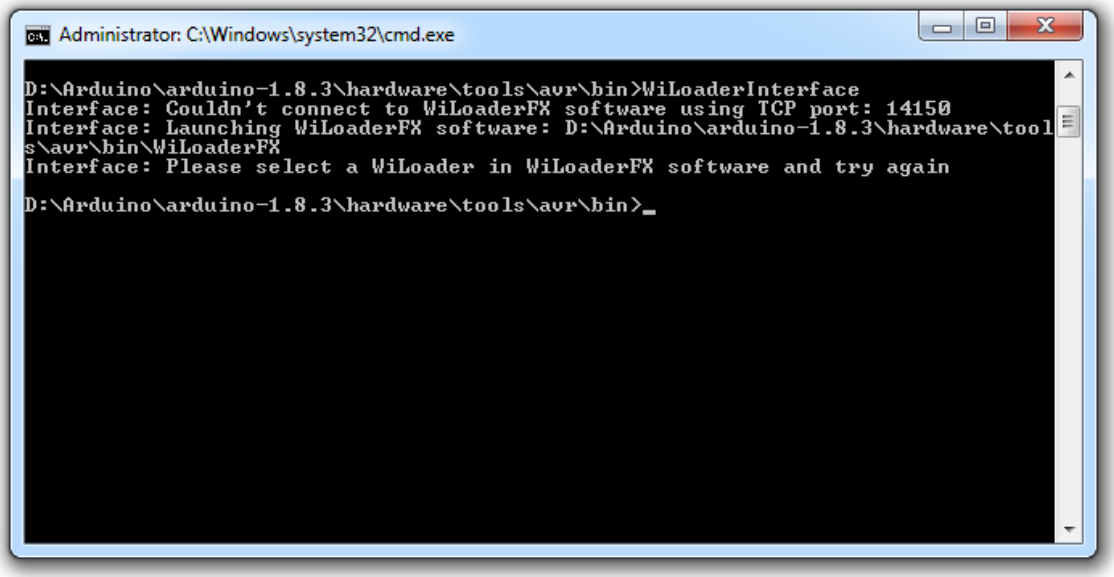
In this case, the user can program four MCUs with four WiLoader connected to the same network by four independent instances of WiLoaderFX software, simultaneously.

Command Line Interface

In order to use the WiLoaderFX software in different compilers and IDEs such as Arduino, Atmel Studio and CodeVision AVR, a command line interface is provided and its file is called WiLoaderInterface, which is placed in the bin folder beside the WiLoaderFX file.

This interface can be used instead of the GUI. When using the command line interface, an instance of the WiLoaderFX will be opened.The opened GUI window should stay open while using the command line interface, however, The user can minimize the GUI window, while working with this interface (or when using Arduino IDEs, etc.).

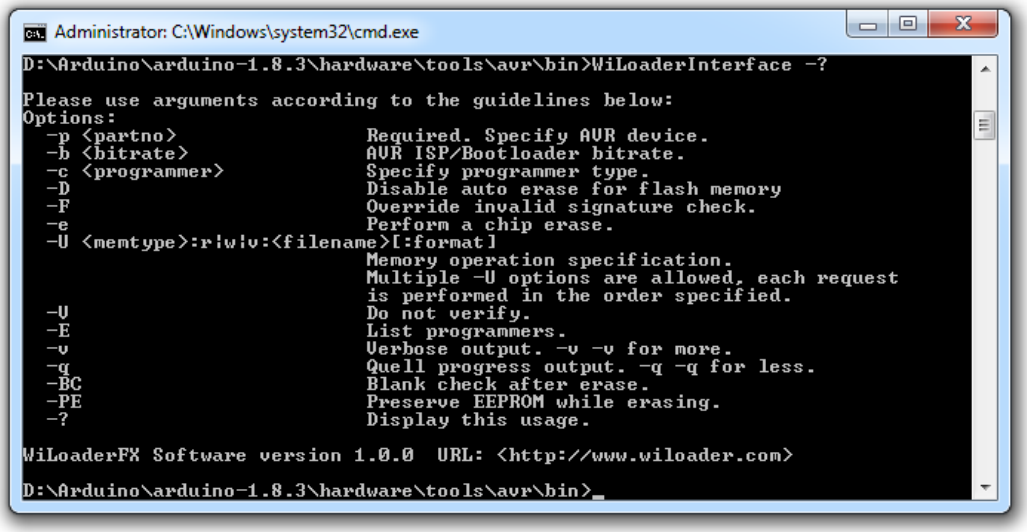
If the WiLoaderInterface file is called and executed but there is no running instance of WiLoaderFX, an instance will be opened and displayed to the user. From now on, the user can execute the commands after selecting a WiLoader in the main software.



Note: This interface uses a TCP port to communicate with the main software, which loads it from the wiloader.conf file in the etc directory. As a result, the user must either allow the interface to open the original file (as mentioned before) or to run the interface from the same path as the WiLoaderFX that is used alongside the WiLoaderInterface, so both softwares open the same TCP port. (In case of simultaneous use of several WiLoaderFX software and due to the inability to open a port by several applications, the port number will be changed in subsequent instances and stored in the corresponding configuration files)

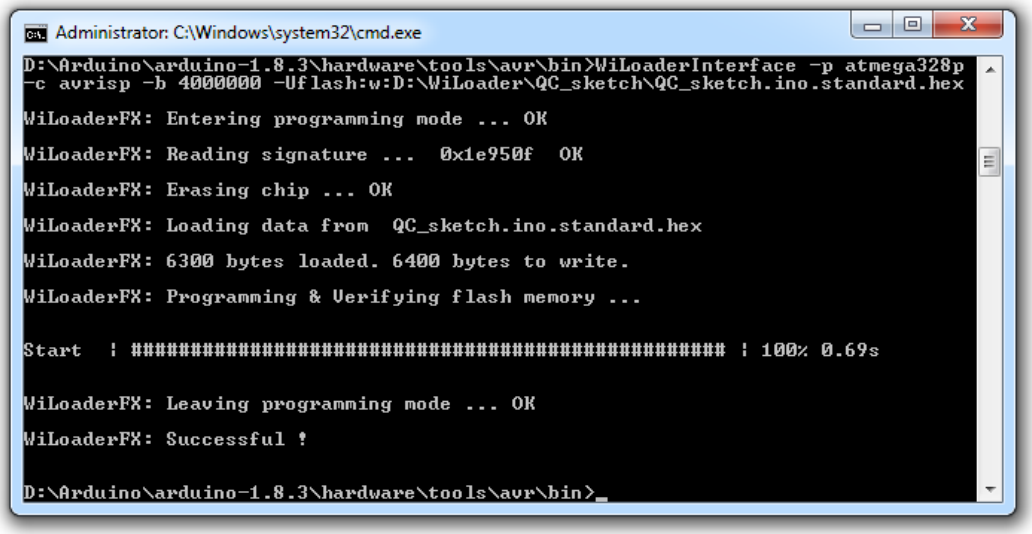
Most of the options and commands used in this interface are designed to be compatible with avrdude software. Therefore, to connect this software to different IDEs, the same methods can be employed, except that the address of avrdude executable file must be replaced by WiLoaderInterface's address.

The following options can be employed for working with this interface:



The user should utilize -p switch for introducing the MCU that is being used, -b for clock frequency, -c for protocol selection and -U for choosing operations. For example, in order to program the QC_sketch.ino.standard.hex file, on the ATMega328P micro-controller using the AVRISP protocol and 4Mbps speed, the user must enter the following command:

WiLoaderInterface –p atmega328p –c avrisp –b 4000000 –
Uflash:w:D\WiLoader\QC_sketch\QC_sketch.ino.standard.hex

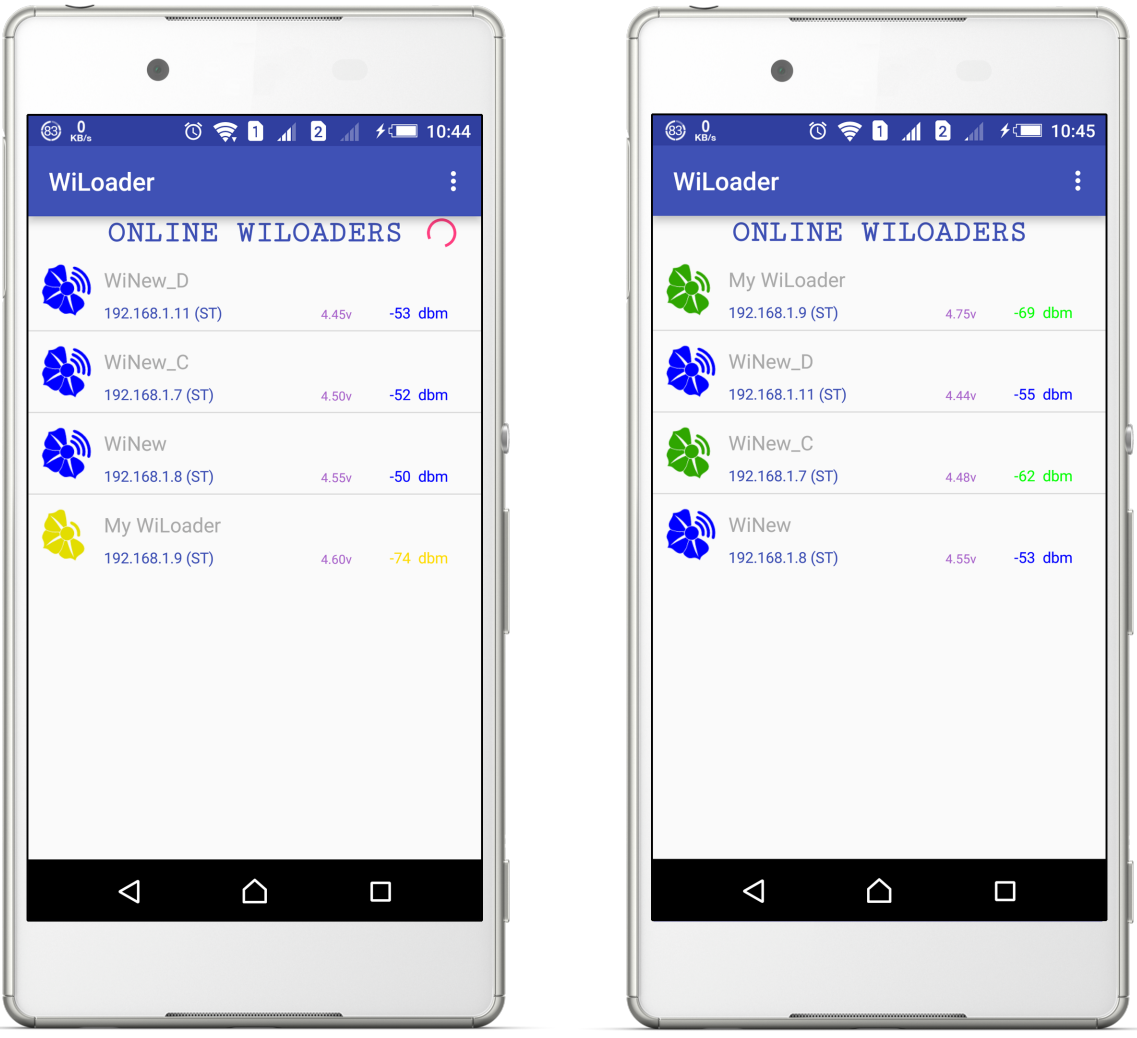


In the above command, the flash after U switch specifies the type of memory, and the letter w represents the write operation.
In order to perform read operations, r: should be used and v: for verify operation. Ueeprom must be used When performing operation on EEPROM memory and the -Usignature: r command for reading the MCU's signature. Finally, in order to manipulate the fuse and lock bits, -Ulfuse, -Uhfuse, -Uefuse, and -Ulock must be used.

WiLoader Smartphone App

The smartphone app is capable of connecting to WiLoader, changing its various settings and communicating with the target via WiFi-UART bridge using the terminal tab.

The app first page shows the list of available WiLoaders in user's WiFi network. This page displays the name of each WiLoader along with some information such as its IP address, signal strength and WiFi mode.



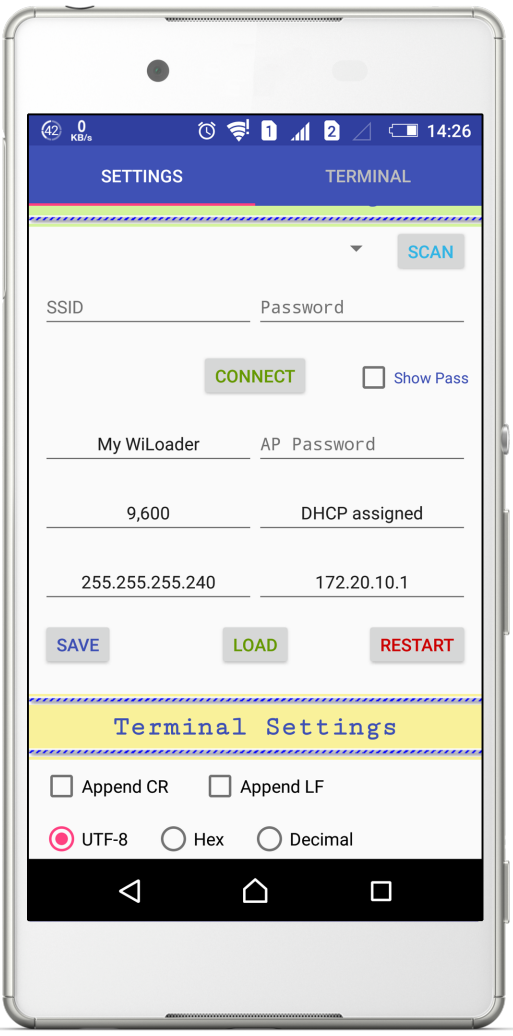
In order to select a WiLoader from the available list, the user should tab the desired device. Afterwards the app will connect to the chosen WiLoader and goes to a new page.

Note: The color and image of logo beside each WiLoader indicates, how strong is the connection. When its blue it means that the signal strength is excellent. As the connection becomes weaker the color turns to green, yellow and red accordingly.

When user selects a WiLoader, the interface below will appear on the screen. The setting tab will display all the different options and fields as explained before.

In Setting tab, user can select and change WiLoader's desired WiFi network, adjust UART baud rate, WiLoader's WiFi properties and choose the necessary terminal options as needed.

In order to reset WiLoader, the Restart button can be used. The app will show WiLoader's existing settings by pressing Load button and the save button can be used for storing the entered fields on WiLoader.



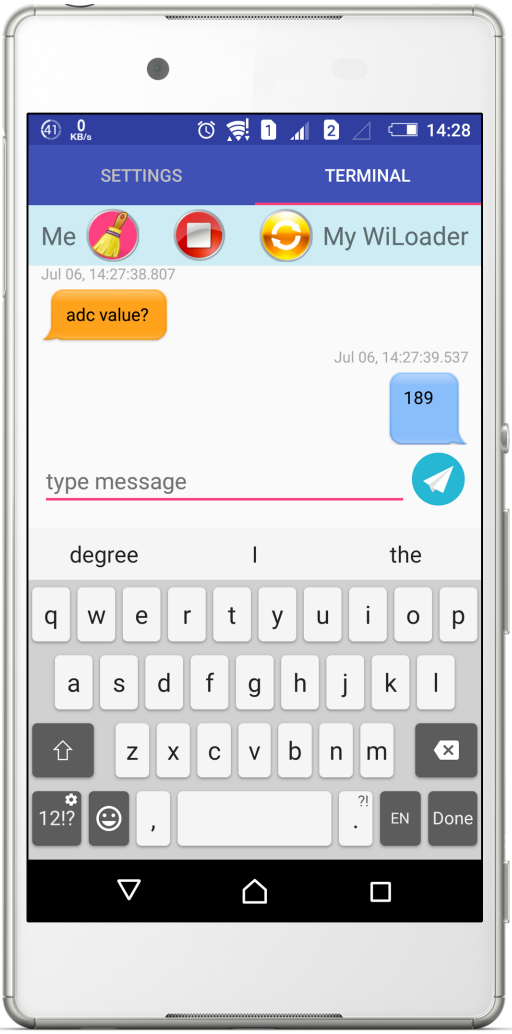
Note: In order to save the entered settings properly the Save button must be pressed and after receiving the successful operation message, for applying these new settings to WiLoader, the device should be restarted using Restart button in the software or by pressing the R button on WiLoader itself.

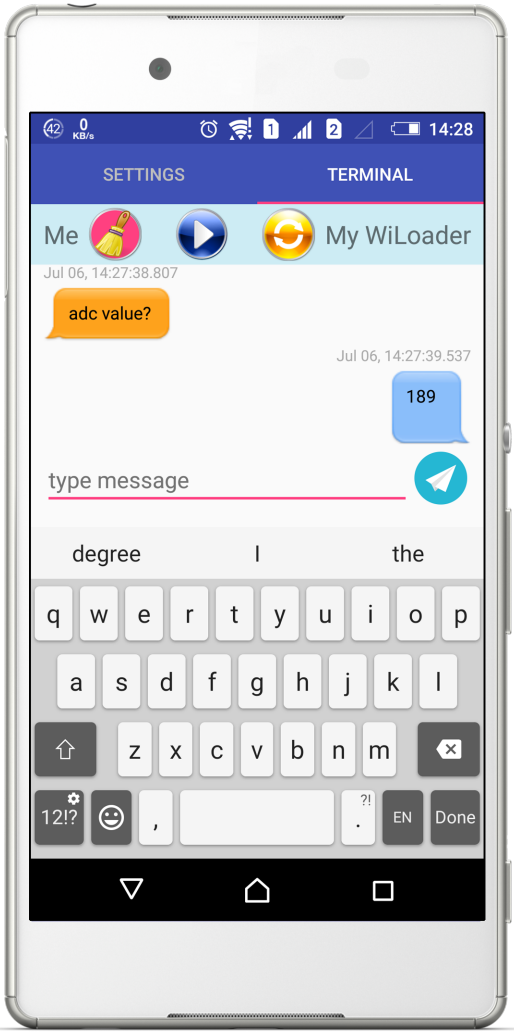
The user can employ Terminal tab for connecting to the target MCU and communicating with the desired device via WiFi-UART bridge. This tab works like the terminal tab inside

Connect **Reset MCU** **Disconnect** **Clear Screen**

WiLoaderFX software
The images shown above are the buttons that can be used to connect, disconnect, reset MCU and clear screen.

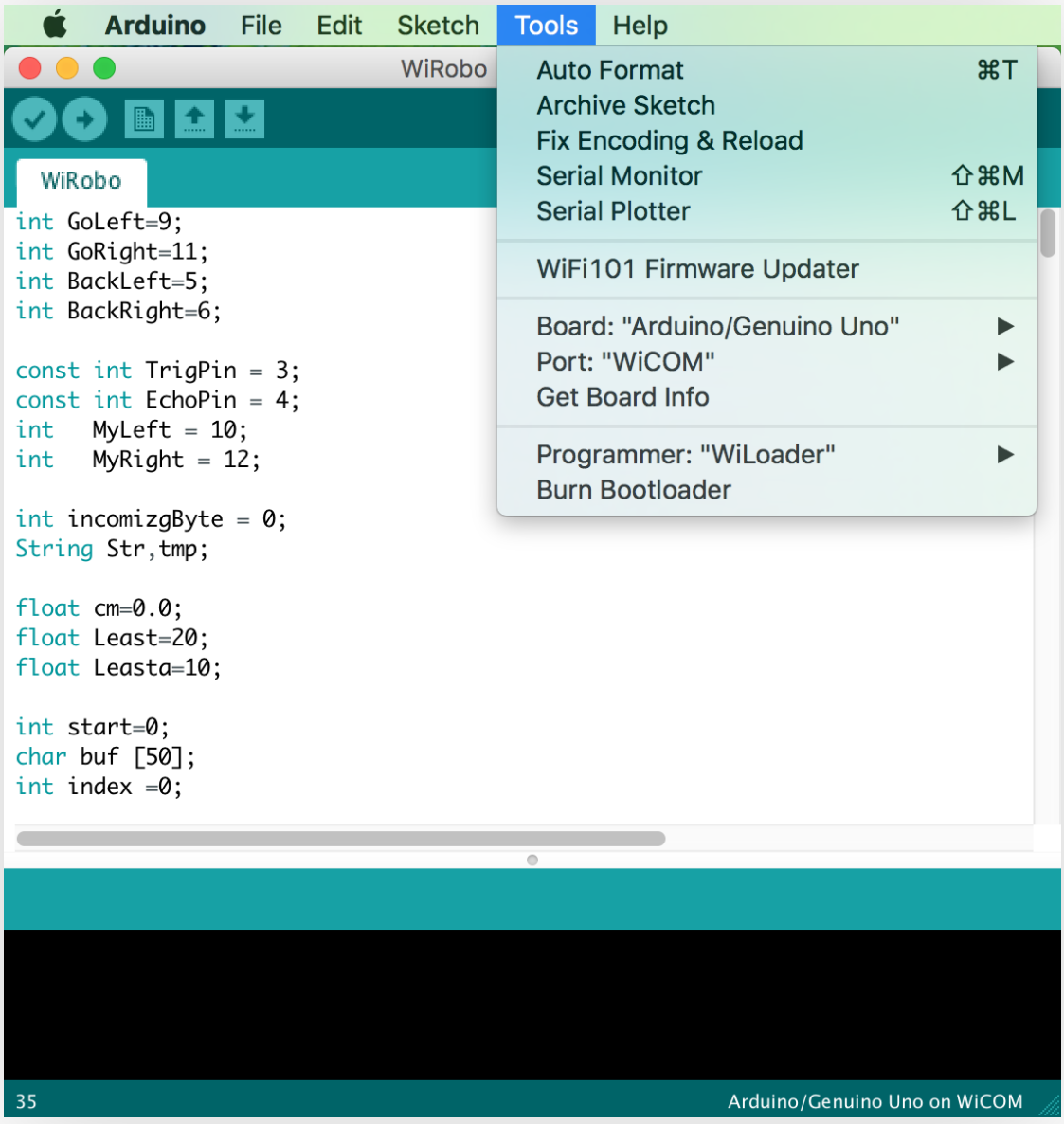
Note: There are several options available when using this tab for communicating or chatting with the target board. These options are available at the bottom of setting tab.





Connecting to Arduino IDE

A software patch is placed in the software package for integrating WiLoader inside Arduino IDE and for using WiLoader to program Arduino sketches on different boards. The user can start working with WiLoader, after installing the ArduinoPatch on his or her system.



After applying the ArduinoPatch, WiCOM will be added to port list and WiLoader as a new programmer.
There are two methods for programming the target MCU with WiLoader.

1) WiCOM port is selected and upload command is chosen.(boot-loader will be used)
2) WiLoader is selected as the programmer and upload using programmer or burn boot-loader is chosen.(Target MCU will be programmed via SPI pins)

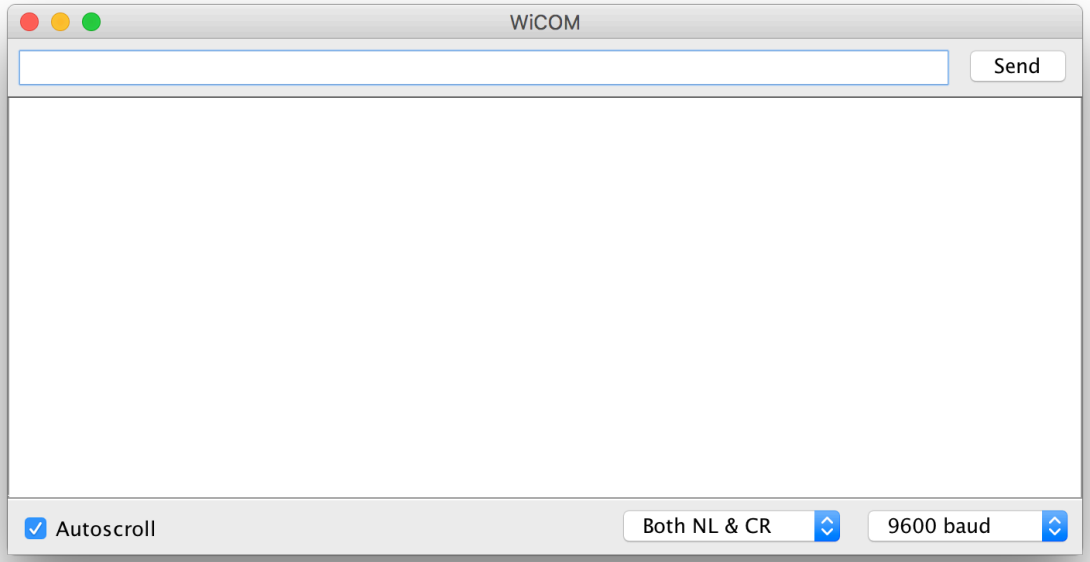
Only for the first time, when WiLoaderFX software is not running, Arduino opens the WiLoaderFX software by calling the WiLoaderInterface. Then, the user should press the scan button and choose a WiLoader inside the WiLoaderFX software. Afterwards, the user can perform the needed operation again. From now on, the user can minimize the WiLoaderFX software and continue to program using only Arduino IDE interface.

To use the WiFi-UART feature, the user can also work with the Arduino Serial Monitor software in addition to the Terminal tab inside the WiLoaderFX software.

Note: When Arduino Serial Monitor is used and the WiLoaderFX is closed, the software will automatically open.

Note: Simultaneous use of Arduino Serial Monitor and the Terminal tab inside WiLoaderFX is possible.

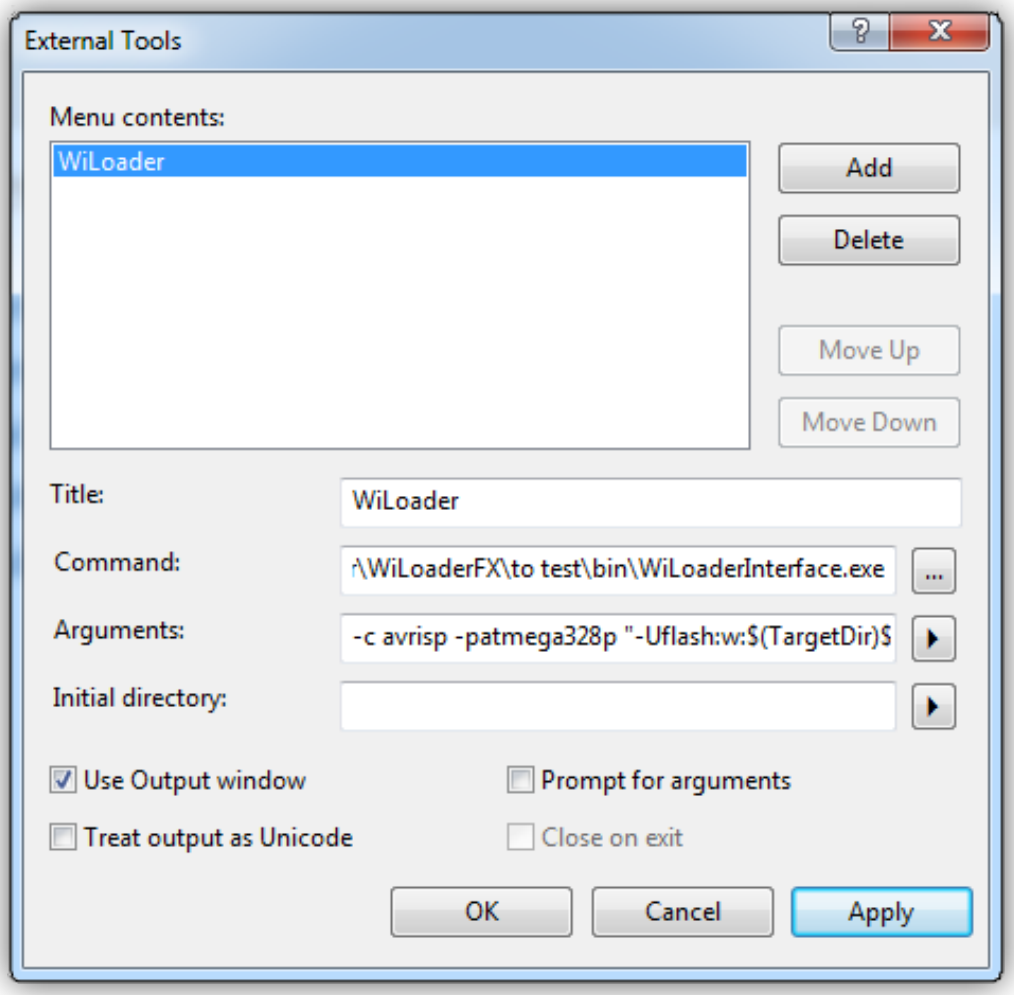
Note: If UART baud-rate is changed by Arduino Serial Monitor, this new value will be stored and applied to WiLoader. (There is no need for resetting WiLoader)



Connecting to Atmel Studio

For connecting to the Atmel Studio, the user can select the External Tools from the Tools menu, and fill the Title field with the desired name (for example, WiLoader) and then fill the Command field with WiLoaderInterface file path. (When there is space in WiLoaderInterface path, its better to put the whole path inside “ ”) . In the field beside Arguments enter the following parameters: -c avrisp -p atmega328p -b2000000“-Uflash:w:$(TargetDir)$(TargetName).hex”

Instead of avrisp, the user can work with other protocols (for example, optiboot or stk500v2 protocol when working with Arduino), and instead of atmega328p, the user needs to insert the desired MCU part-number. Moreover, The programming bitrate can be changed with the -b

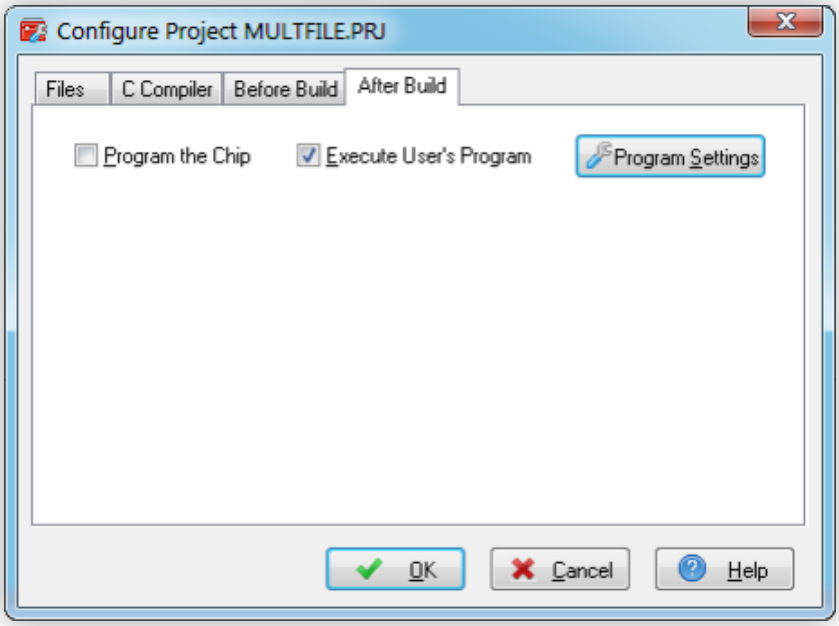


option.
After adding the new tool, WiLoader can be accessed in the Tools menu.
The user can also add WiLoader as a custom programming tool from the properties section of each project. In this case, the command and arguments fields entered above should be written in the Command field consecutively. With the difference that in front of –Uflash:w: should be the full address of hex file, because the TargetDir parameter in this method is not replaced by

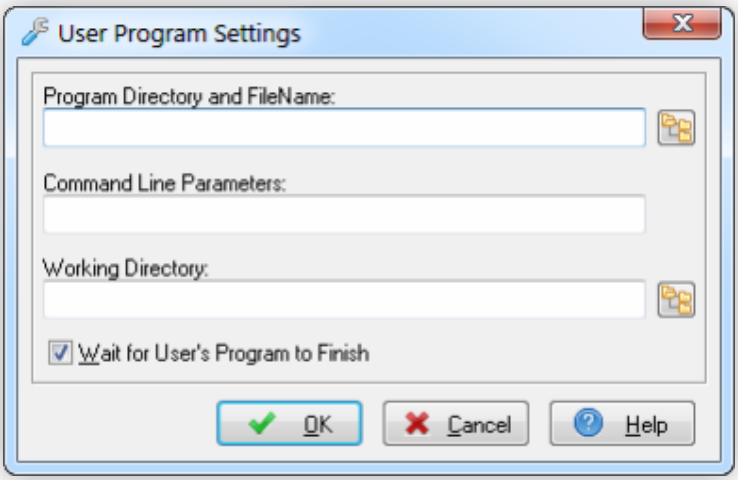
the Atmel Studio with the project path. Finally, the green arrow (start without debugging) can be utilized in order to program the MCU.

Connecting to CodeVision AVR

The connection to this software is similar to Atmel Studio. In this application, the user should



select the Execute User's Program option inside After Make tab in project properties and then enter the necessary parameters by pressing the Program Settings button.
The Program Directory should be filled in the same way as in Atmel Studio with WiLoaderInterface file path. The Command Line Parameters section must also be filled in with programming parameters, with the difference here being that in front of –Uflash:w: the full path of hex file must be inserted. For example, the Parameters section should be filled as written below.
–p atmega328p –c avrisp –b 2000000 “–Uflash:w:D:
\WiLoader\QC_sketch\QC_sketch.ino.standard.hex”

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