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MCCI Cricket UI User Guide

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PROPRIETARY NOTICE AND DISCLAIMER

Document Release History

Rev A	2020-06-30	Initial Release
Rev B	2020-07-10	Improve GUI Panel Name
Rev C	2020-09-23	Mac app menu implementation
Rev D	2021-01-05	Add support for 2101 USB Connection Exerciser and improvement in UI design.
Rev E	2021-02-23	Python implemented to Pep8 coding standard. Package release for Raspberry Pi OS ubuntu18.04
Rev F	2021-05-03	Add support for 2301 USB Connection Exerciser.
Rev G	2021-07-14	Add new feature for Three Computer System, Two Computer System.
Rev H	2021-11-01	Feature added – Plotting of VBUS VI, USB Tree view removed and merged with Log window.
Rev I	2022-10-28	Added support for USB4, Multi switch support.

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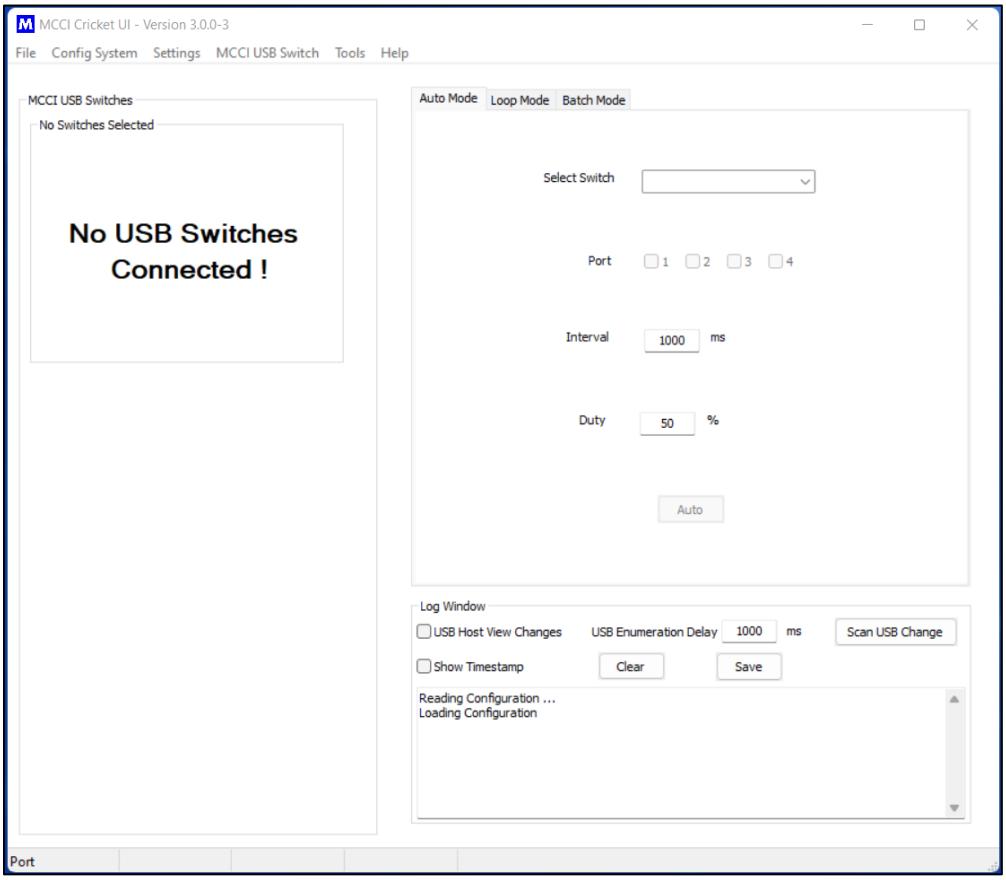
1 Introduction

MCCI developed a common UI "**MCCI® Cricket UI**" to control the "MCCI USB Switch 3141 " and "MCCI USB Switch 3201 Enhanced Type-C Connection Exerciser" ," MCCI USB Switch 2301 Type-A gen2 Connection Exerciser" and "MCCI USB Switch 2101 Connection Exerciser". This document provides instructions on how to use features provided by the GUI application and other available control options. GUI overview is shown in the Figure 1

Figure 1 MCCI Cricket UI Overview



2 MCCI USB Switch Supported

2.1 MCCI USB4™Switch 3141

The MCCI® MCCI USB4™ Switch 3141 is a computer-controlled programmable 2:1 switch, connecting two USB Type-C receptacles to a single Type-C plug. It is compatible with USB4 hosts and devices, as well as older protocols such as Thunderbolt™ 3, USB 3.2 gen2 or gen1, USB 2.0, USB Type-C Alternate Modes, and of course Power Delivery.

The MCCI USB Switch 3141 automates connect/disconnect of one or two devices to a USB Type-C port. It can be used in stress testing, switching between peripherals (for example, a dock and a display), or any

automated reconfiguration of a USB Type-C port. For more information, see the product home page at www.mcci.com.

Figure 2 MCCI USB Switch 3141 USB4 Switch

2.2 MCCI USB Switch 3201 Enhanced Type-C Connection Exerciser

The MCCI MCCI USB Switch 3201 Enhanced Type-C Connection Exerciser (MUTT ConnEX-C) plugs and unplugs up to 4 USB-C® devices for automated testing of USB Type-C® products. For more information, see the product home page at www.mcci.com.

Figure 3 MCCI USB Switch 3201 Type-C Connection Exerciser

2.3 MCCI USB Switch 2101 USB Connection Exerciser

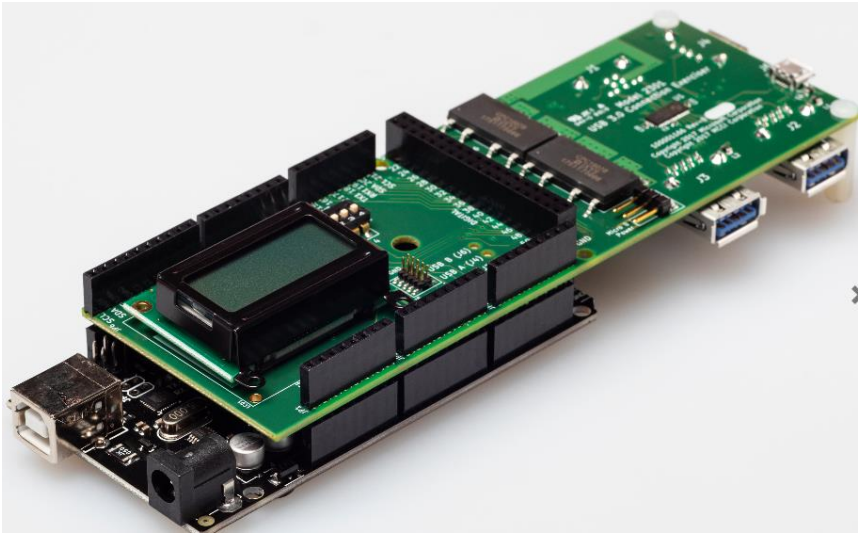
The MCCI USB 3.0 Connection Exerciser MCCI USB Switch 2101 automatically connects and disconnects a USB 2.0 or 3.2 gen1 host and device under push-button or software control. Connections can be single-stepped or repeated. The manual modes are useful for debugging attach/detach scenarios. For more information, see the product home page at www.mcci.com.

Figure 4 MCCI USB Switch 2101 connection Exerciser

2.4 MCCI USB Switch 2301 Type-A USB 3.2 Gen2 Connection Exerciser

The MCCI USB Switch 2301 Type-A Connection Exerciser provides a four-to-one USB switch to automate interoperability tests for systems USB 3.2 gen1 or gen2. It uses the supplied Arduino-based controller and electronic switches to electrically plug and unplug any of the four different input ports. The Gen2-capable Type-B plug can be connected to either of two Type-A receptacles, to a Standard-A receptacle (USB 2.0 only), or a Micro-B receptacle (USB 2.0 only). The Type-A Gen2 receptacles support USB 3.2 (gen 1 and gen 2) and USB 2.0 (high speed, full speed and low-speed) devices. The Standard-A receptacle supports USB 2.0 devices. . For more information, see the product home page at www.mcci.com.

Figure 5 MCCI USB Switch 2301 Type-A USB 3.2 Gen2 Connection Exerciser



3 Download and Installation

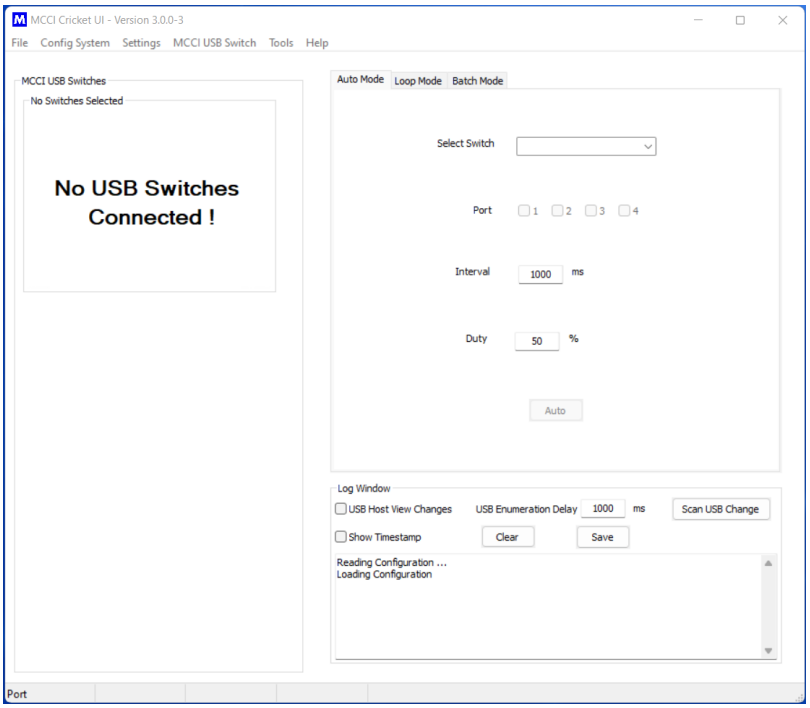
Download the installation setup for "MCCI USB Switch Cricket UI" software from here, the Knowledge base section in MCCI portal (https://portal.mcci.com/portal/kb) and follow the instruction for software installation.

4 MCCI Cricket UI Overview

When the installation successfully completes, execute the "`Cricket UI`" file, from `Start → All Programs`, or from the shortcut provided on the desktop. When the application starts, the following GUI screen displays as Figure 1, the GUI window contains these following sections:

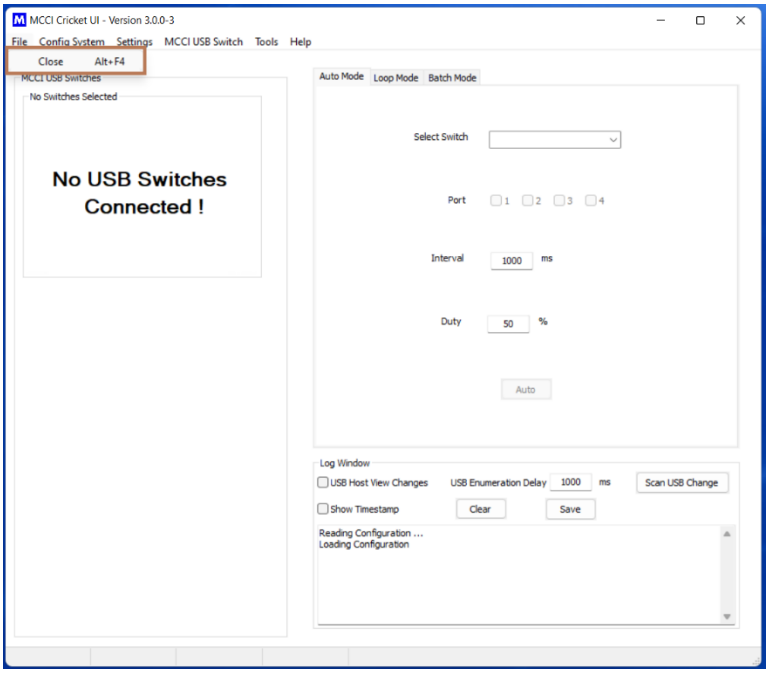
- MCCI USB Switch `3201/` MCCI USB Switch `3141/` MCCI USB Switch `2301/` MCCI USB Switch `2101/` USB Switch `Ports Control`: It has the option to control the ports of the device, this varies for MCCI USB Switch 3141, 3201, 2301 and 2101.
- `Loop Mode`: Switch the selected port in cyclic mode.
- `Select MCCI USB Switch`: Listed the number of devices attached in it and the user can select the device to be controlled.
- `USB Device Tree View Changes:` It displays the features of the attached Devices on to the port.
- `Log Window`: Print the device's switching activity logs with timestamp.
- `Status Bar`: It is available at the bottom of the GUI and displays the status of the switch connected and Host system's USB controller status, port details, et. As shown in Figure 6
- `Menu Bar`: It has a File and Help menu. As shown below in Figure 7 .

Figure 6 Status Bar

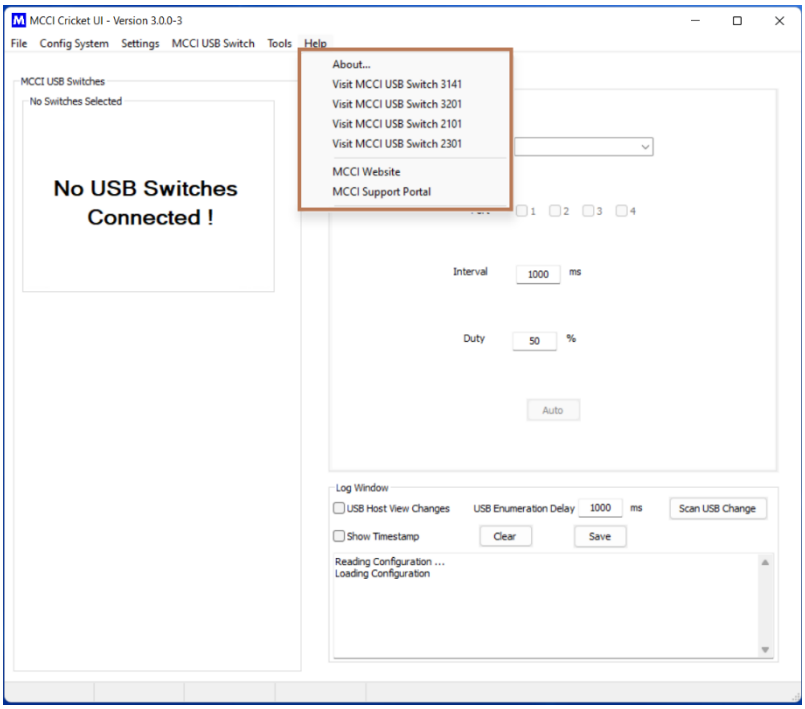


FILE MENU

Figure 7 Menu Bar



HELP MENU



5 Mac OS Menu Overview

The menu bar in Mac OS has three menus, (MCCI Cricket UI), Window and Help menu as shown in Figure 9

Cricket UI APP MENU

Figure 8 Cricket UI in Mac

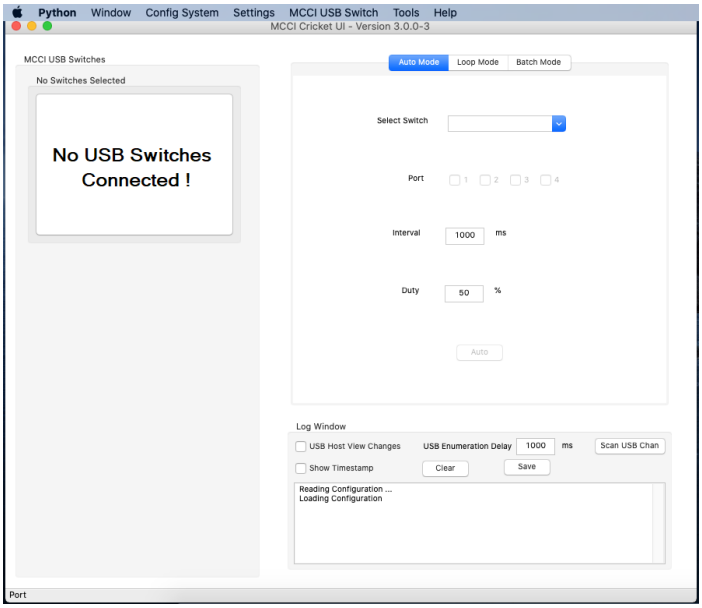
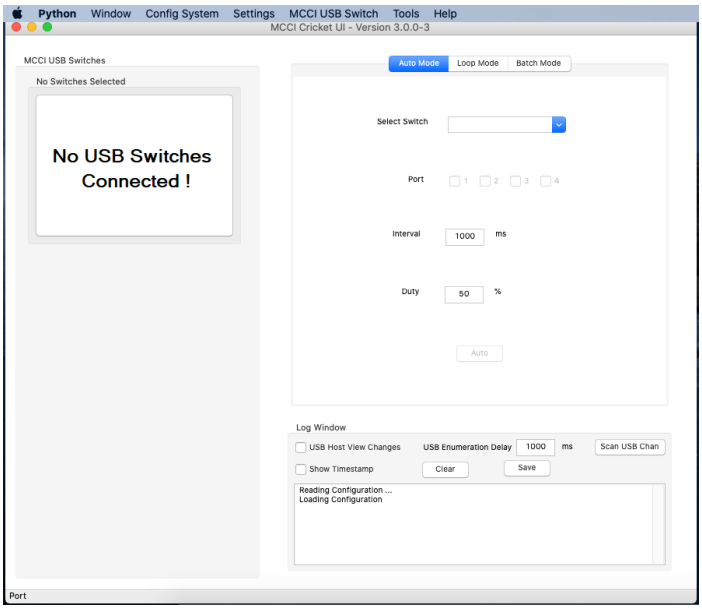
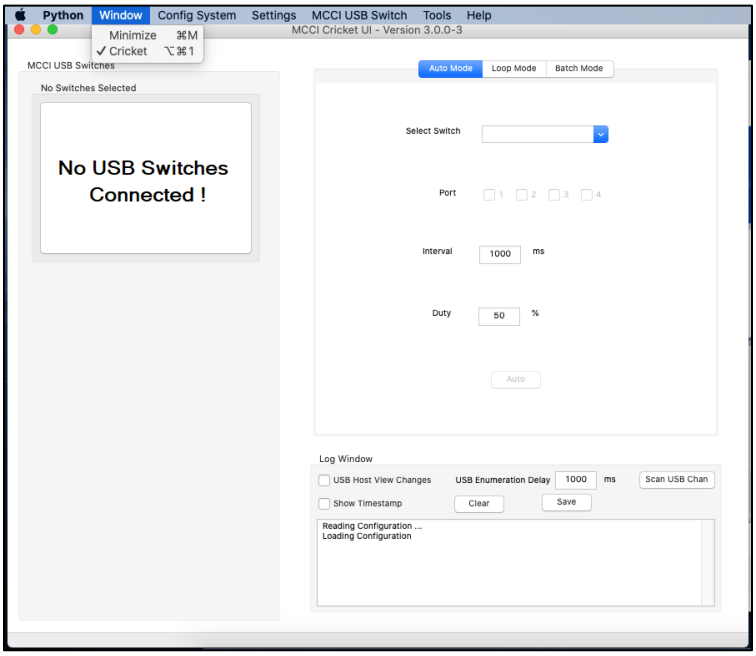


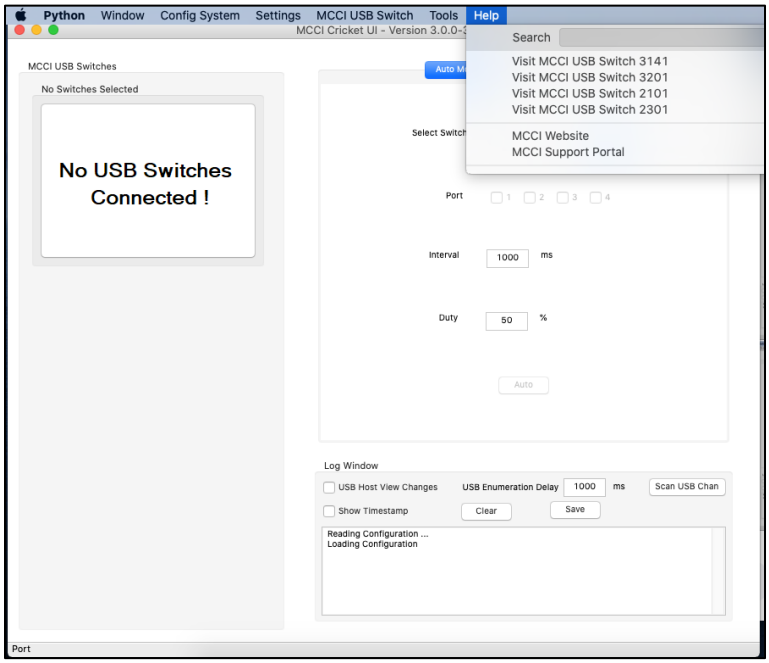
Figure 9 Menu bar in Mac OS



WINDOW MENU



HELP MENU



6 Different Computer System

This Cricket UI application consists of three modules, such as User Interface, Device Control and USB Test Host.

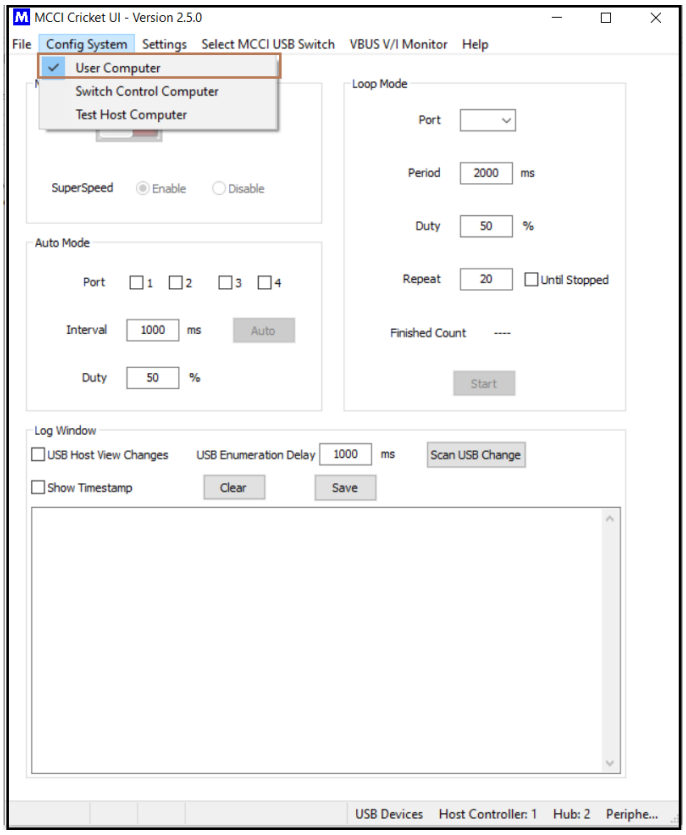
User Interface enables the user to access all features of this application which includes interface and control of all required USB Connection Exercisers (USB Switches), this module is called as User Computer. Device Control module works closely with the connected USB switches gets input from and send responds to the User Interface module, this USB Switch is called as Control Computer,

USB Test Host module provides the list of USB devices connected with the computer, User Interface module sends request to this module whenever USB device list is required. This module is called as Test Host Computer.

6.1 User Computer

Open the application in one computer, go to the *Config System* and select the *User Computer* sub menu, now the application runs user interface module in that computer as shown in Figure 10.

Figure 10 Config System - User Computer

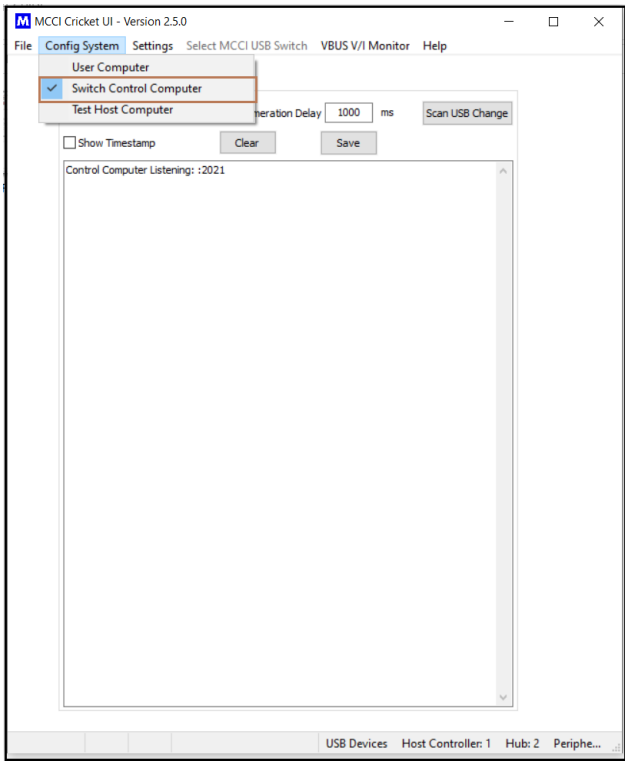


This User Computer acts as a Client in a network, communicates with the Control Computer Server and Test Host Computer server.

6.2 Control Computer

Open the application in one computer, go to the *Config System* and select the *Switch Control Computer* sub menu, now the application runs device control module in that computer as shown in Figure 11.

Figure 11 Config System - Control Computer

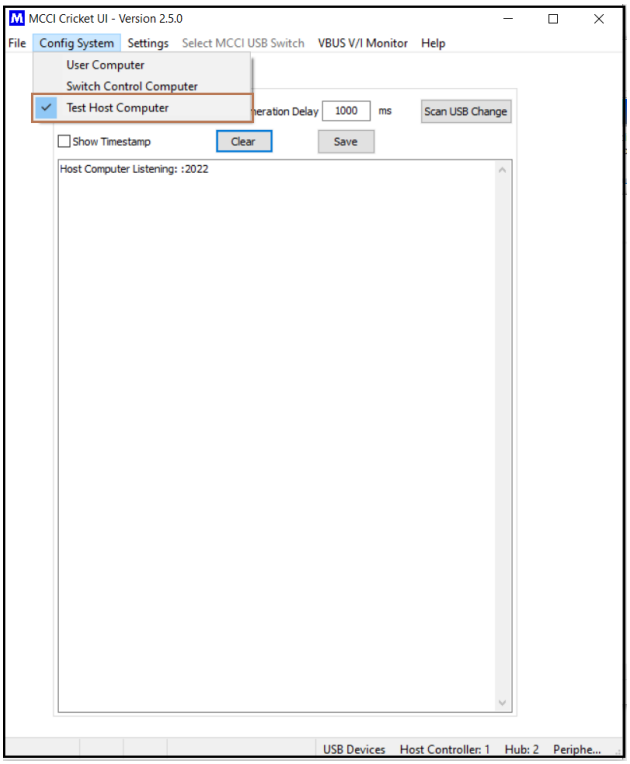


This Control Computer acts as a Device Control Server in a network, responds for the device related queries from the User Computer, also controls the device connected to the computer.

6.3 Test Host Computer

Open the application in one computer, go to the *Config System* and select the *Test Host Computer* sub menu, now the application runs as USB Test Host module in that computer as shown in Figure 12.

Figure 12 Config System - Test Host Computer



This Test Host Computer acts as a server, collect the list of plugged USB devices, sends USB device list to the User Computer, the User Computer will compare with the existing list and list the differences in USB device tree view.

6.4 Single Computer System

In this configuration all the three modules are runs in a single computer, user can enable this as shown Table 1 configuration by selecting all sub menu provided under the *Config System* menu as shown in Figure 13.

Figure 13 Single Computer System

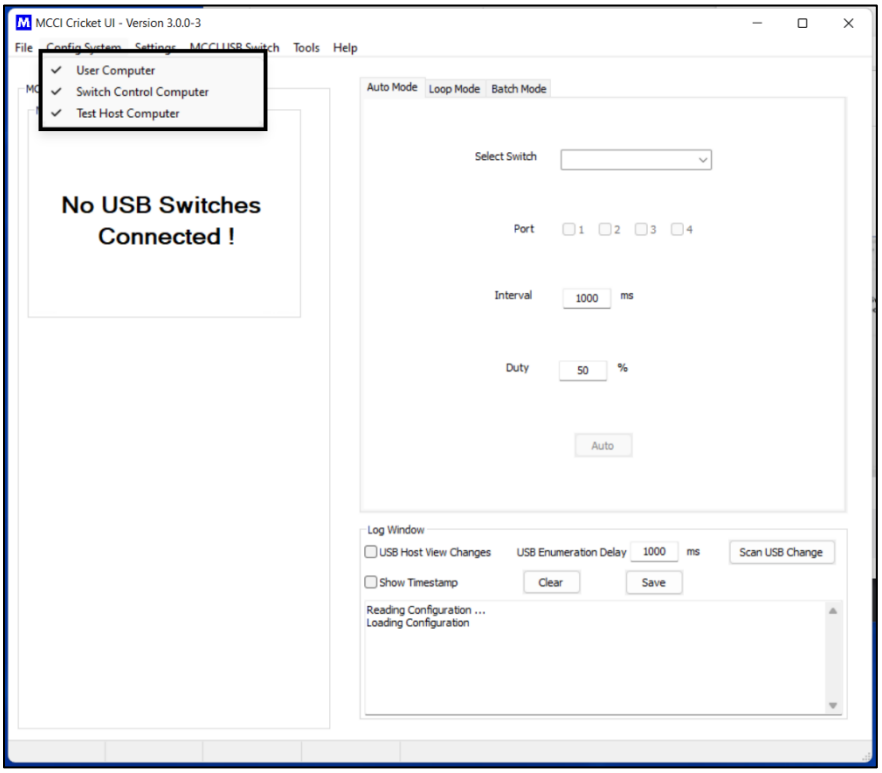


Table 1 Single Computer System

User Computer	Control Computer	Test Host Computer
Computer 1	Computer 1	Computer 1

6.5 Two Computer System

In this configuration any of two modules are runs in a computer and the rest one runs in another computer. The user can make different configurations based on the three modules, the possible configurations are provided in the table below Table 2

Table 2 Two Computer System Configuration

User Computer	Control Computer	Test Host Computer
Computer 1	Computer 1	Computer 2
Computer 1	Computer 2	Computer 2
Computer 1	Computer 2	Computer 1

User has to launch the application in both Computers, and configure the 'Config System' menu based on the requirement

6.6 Three Computer System

In this configuration each module runs in a different computer, the User Computer send device controls to the Control Computer and request USB device list from the Test Host Computer as shown below Table 3 .

Table 3 Three Computer System Configuration

User Computer	Control Computer	Test Host Computer
Computer 1	Computer 2	Computer 3

7 Interfacing Computer System

This part provides detailed information to the user when the user wants to use this application as Two Computer System or Three Computer System.

7.1 Setup requirement

To configure the Two/Three Computer System, all required systems should be connected in a local network under a subnet group. This application uses text based TCP/IP protocol to communicate between the computers, this supports JSON text format.

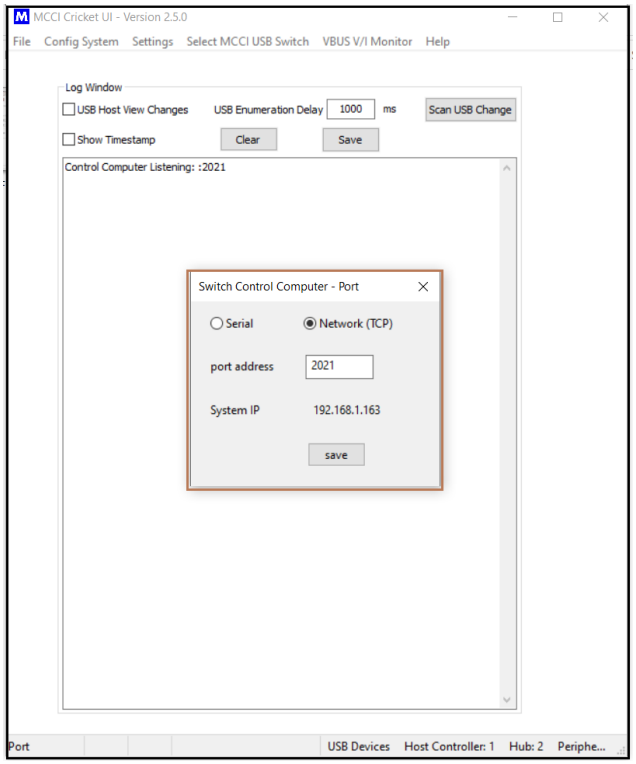
7.2 Setting up Port

This is required when the User Computer and the Control Computer module are runs in a different computer. User need to open the application in Computer 1 and Computer 2, should select the required module in each computer. The computer which runs the User Interface module is called as User Computer, the computer which runs the Device Control module is called as Control Computer.

7.2.1 Control Computer

In Control Computer, go to the *Settings* menu, select the *Switch Control Computer* sub menu, new settings dialog will open with the title of Switch Control Computer – Port. The first is used to select the interface type, Serial interface is not implemented in this version, user need to select the *Network (TCP)* option. The next input field is used to get the port number from the user, by default it is 2021. User can set the different port number but should ensure that port should be free and not in open by other applications as shown in Figure 14.

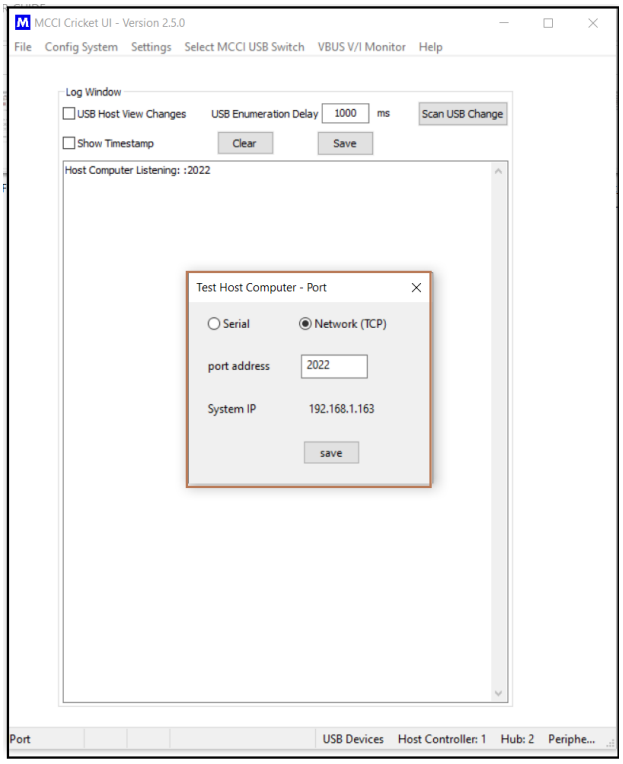
Figure 14 Port Setting - Control Computer



7.2.2 Test Host Computer

In Test Host Computer, go to the *Settings* menu, select the *Test Host Computer* sub menu, new settings dialog will open with the title of Test Host Computer – Port. The default port number is 2022, the user can set the different port number which if free on the computer as shown in Figure 15.

Figure 15 Port Setting - Test Host Computer



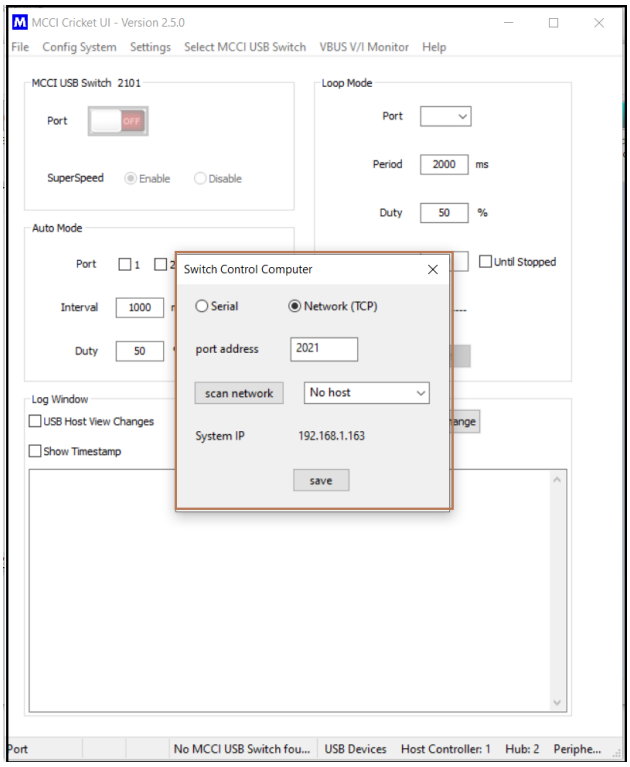
7.3 Connect Computers

This section describes about how to make connection between User Computer and Control Computer, Test Host Computer. After assigning Port numbers to the Control Computer and Test Host Computer, user has to establish the interface in the User Computer.

7.3.1 Connecting Control Computer

In the User Computer, go to the *Settings* menu, select the *Switch Control Computer* sub menu, a settings dialog will appear with the title of Switch Control Computer, where user has to provide the Port number of the Control Computer then click the *scan network* to search for the Control Computer which is available in the local network. It will list the IP address of the available Control Computers in the selection control, user has to select and click *save* to store the configuration as shown in Figure 16 .

Figure 16 Interface Control Computer

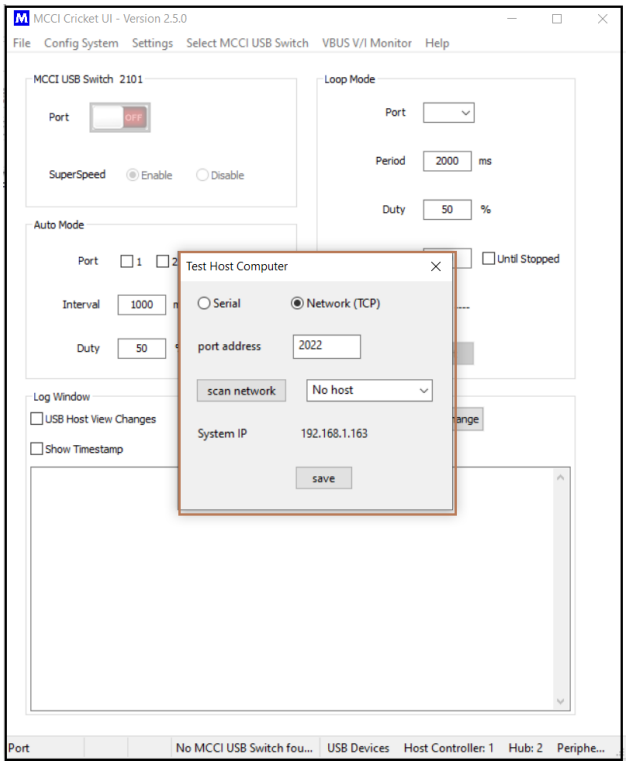


For controlling the device/MCCI USB Switch, the user computer uses the stored Port number and IP address to establish communication between User Computer and Control Computer.

7.3.2 Connecting Test Host Computer

In the User Computer, go to the *Settings* menu, select the *Test Host Computer* sub menu, a settings dialog will appear with the title of Test Host Computer, where user has to provide the Port number of the Test Host Computer then click the *scan network* to search for the Test Host Computer which is available in the local network. It will list the IP address of the available Test Host Computers in the selection control, user has to select and click *save* to store the configuration as shown in Figure 17.

Figure 17 Interface Test Host Computer



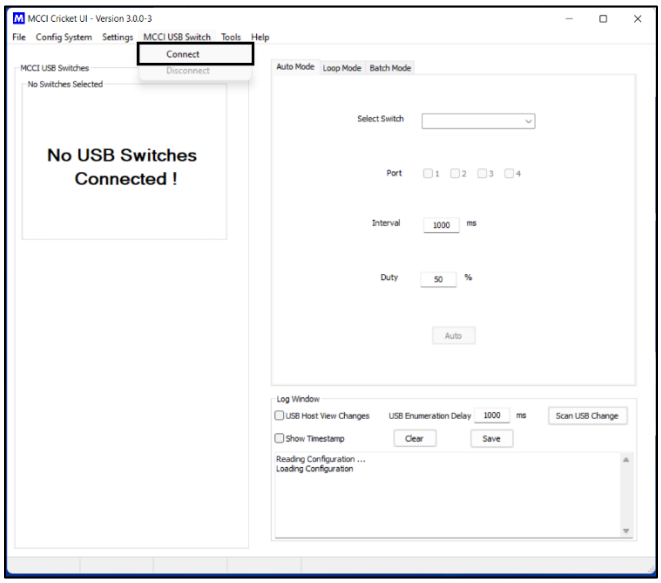
For getting plugged USB device list, the user computer uses the stored Port number and IP address to establish communication between User Computer and Test Host Computer.

8 GUI Feature and Options

8.1 Select MCCI USB Switch

The GUI can automatically detect the MCCI USB Switches 3141, 3201, 2301 and 2101 device, The device MCCI USB Switches 3201, 3141, 2301 and 2101 can be selected from the `Select MCCI USB Switch` as show in below Figure 18.

Figure 18 Select MCCI USB Switch Menu



Auto Search MCCI USB Switch

Open the application go to the ***Select MCCI USB Switch*** and select "***Connect"*** sub menu, a dialog window will appear with title name of **"Select MCCI USB Switch"** then here it's searching available MCCI USB Switch(s) automatically.

Manual Search MCCI USB Switch

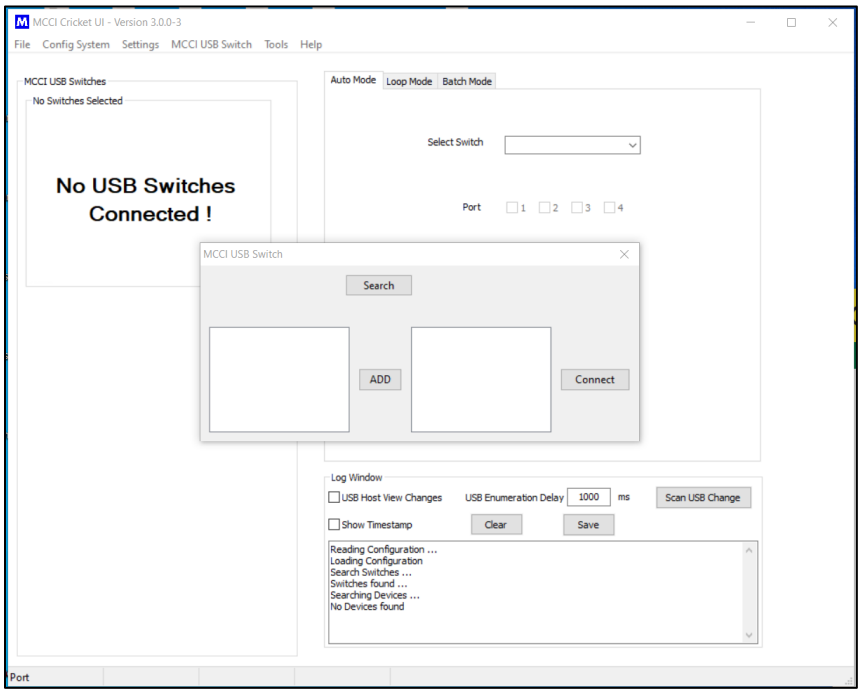
Click the `Search` button to get the list of connected, supported MCCI USB Switches, select a USB Switch from the drop down menu and click `Connect` button to select the USB Switch. The MCCI USB Switch panel gets changed based on the connected Switches as shown in below Figure 19.

The Select MCCI USB Switch control options and descriptions are mentioned in Table 4

Table 4 Select MCCI USB Switch Menu

Control Option	Description
Search	Clicking on that Search Button will show the attached devices in the USB bus/network
Connect Menu	Clicking on that Connect Button, connect the selected device
Disconnect Menu	Clicking on that Disconnect Button, Disconnect the selected device

Figure 19 Select MCCI USB Switch Dialog



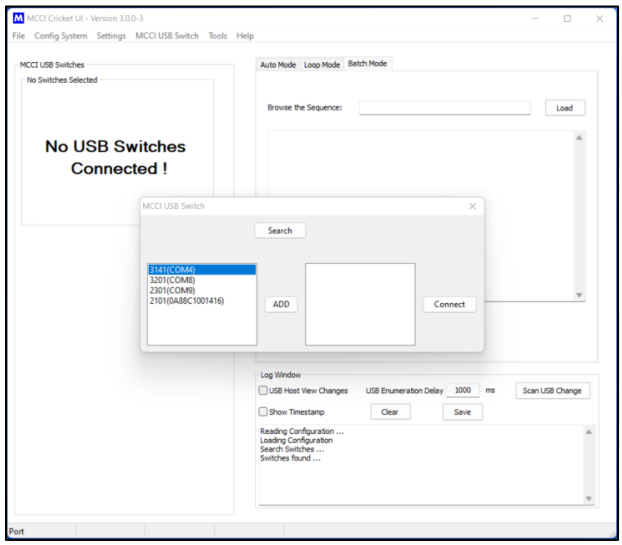
8.1.1 Connect menu

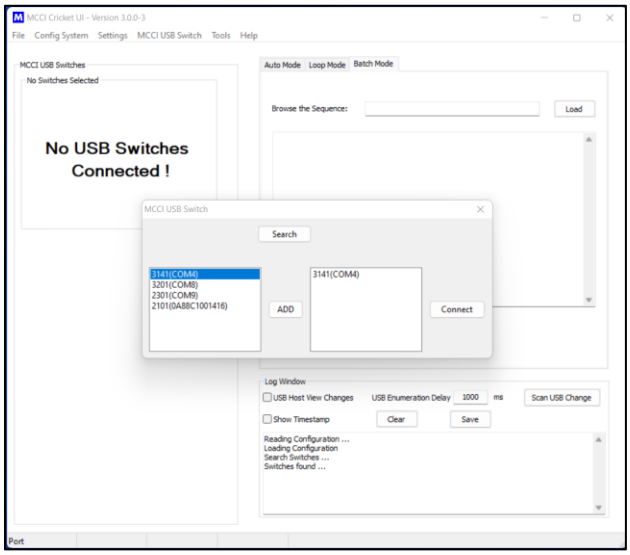
- Go to Select MCCI USB Switch
- Click on Connect Menu then open Select MCCI USB Switch dialog box
- Searching the device from Switching control computer server.
- List of available devices is listed in combo box.
- Connect the device as shown in below Figure 20.

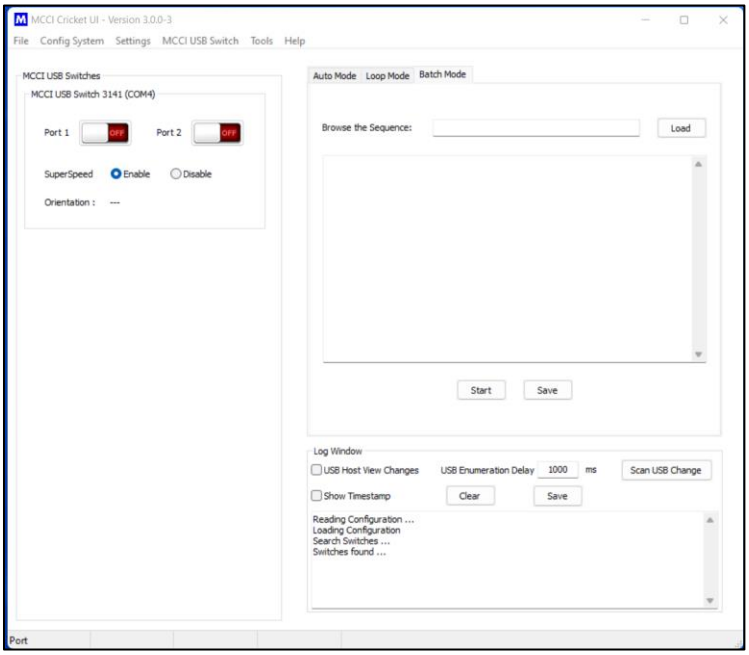
8.1.2 Single Switch Connect

User can connect and control Single USB switches in a single instance, if connected single switch it will be displayed in the switches panel with the Serial Number or connecting port.

Figure 20 MCCI USB Switch Connect device







8.1.3 Multiple Switch Connect

User can connect and control multiple USB switches in a single instance, all connected switches will be displayed in the switches panel with the Serial Number or connecting port.

- Select Two switches add into other list box.
- Once added the switches Click on Connect button then Two switches connected for selecting switches

Figure 21 Multi Switch Connection 3141/3201/2101/2301

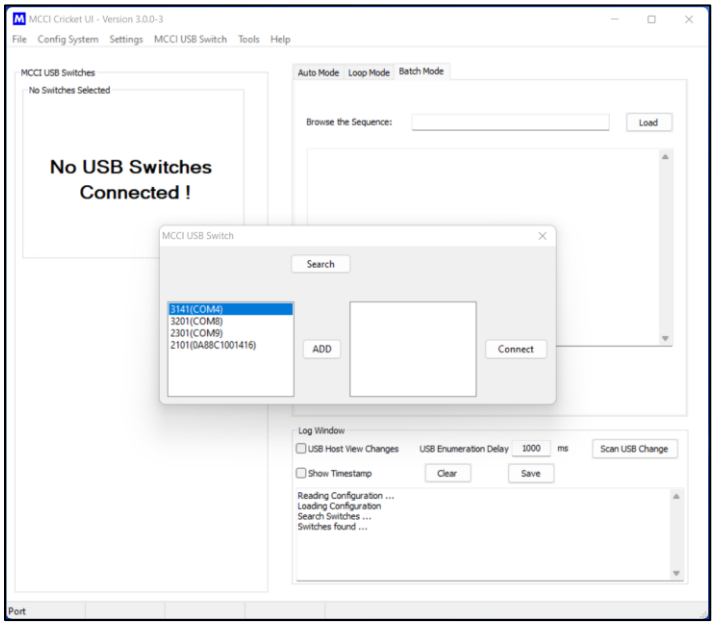
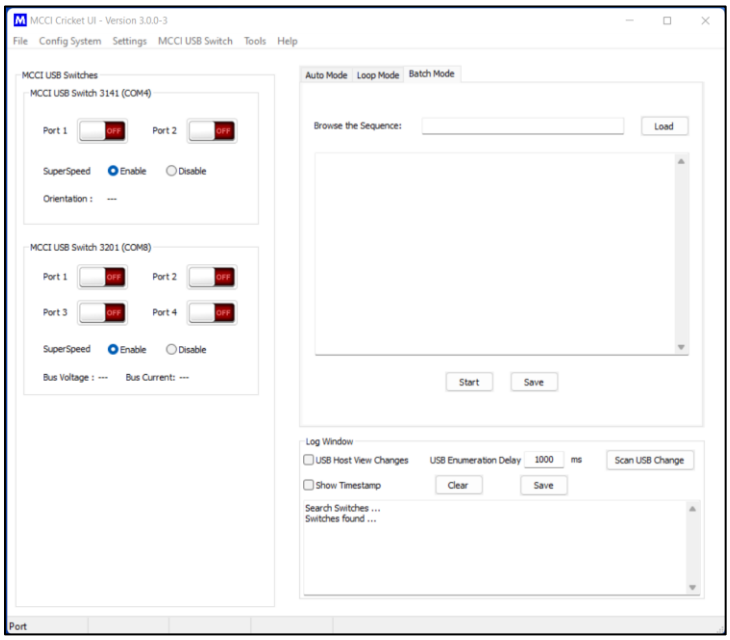
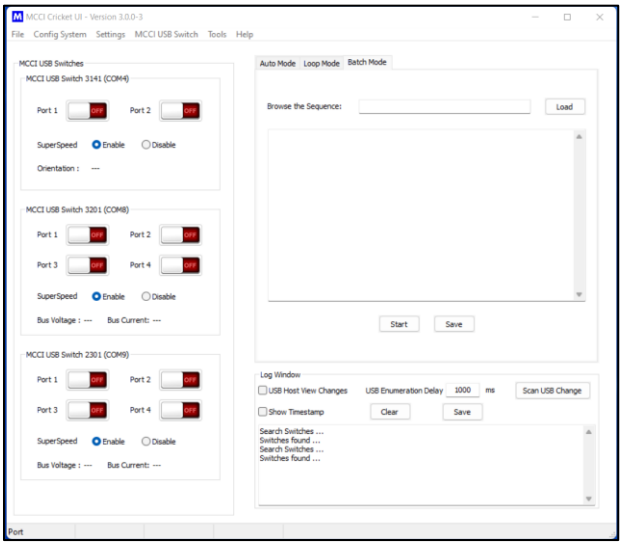


Figure 22 Two Switch Connection



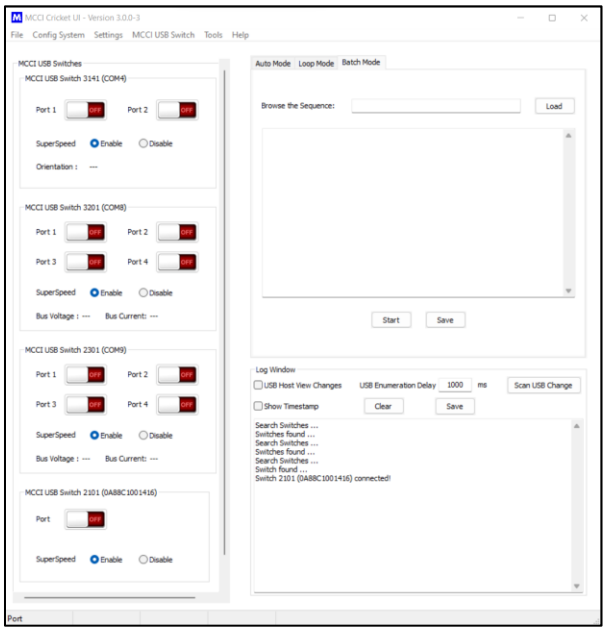
- Select Three switches add into other list box.
- Once added the switches Click on Connect button then Three switches connected for selecting switches

Figure 23 Three Switch Connection



- Select Four switches add into other list box.
- Once added the switches Click on Connect button then Four switches connected for selecting switches

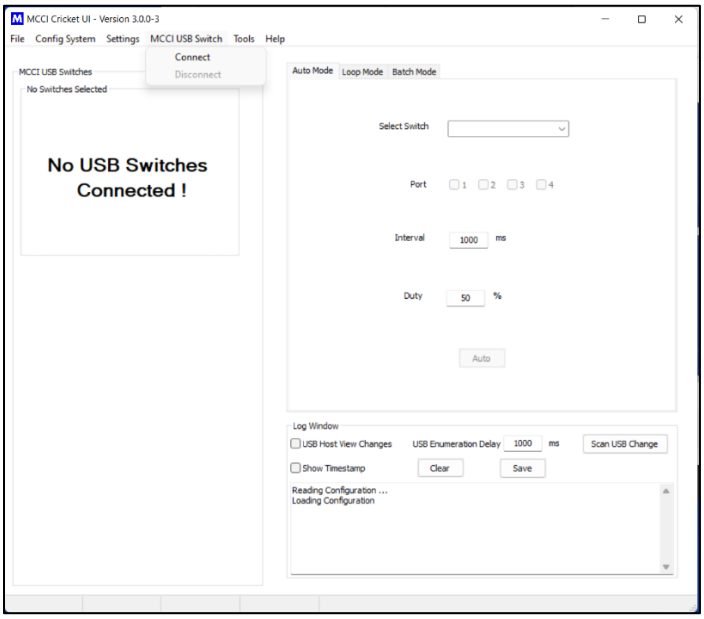
Figure 24 Four Switch Connection



8.1.4 Disconnect menu

Need to disconnect the device go to Select MCCI USB Switch menu click on disconnect button as shown in below Figure 25 .

Figure 25 Disconnect the USB Switch Device



8.2 MCCI USB Switch 3201 UI Control Window

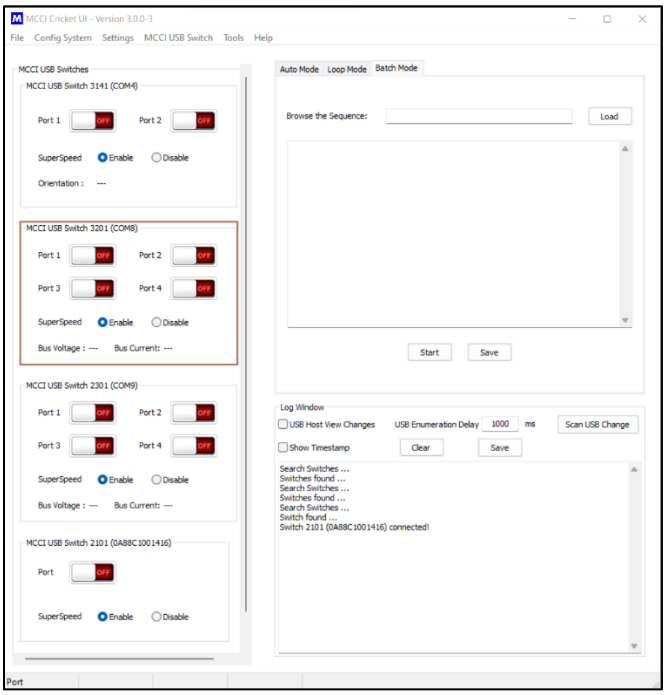
The control window of MCCI USB Switch 3201 appears in the UI, when the MCCI USB Switch 3201 device is selected from the `Manage` MCCI USB Switch `Panel` as shown in Figure 26 .

The control options of MCCI USB Switch 3201 are explained below:

- The **Port** buttons, which will get activated after the device is connected.
- **ON/OFF** switch to control the port state.

- Radio buttons to select Super Speed (**Enable**) or High Speed (**Disable**) lines.
- Volts and Amps button
    - Clicking on the **Volts** button will print the Bus Voltage
    - Clicking on the **Amps** button will print the Current Flow with the direction.
        - Negative value - Current flow from SUT (System Under Test) to DUT (Devices Under Test)
        - Positive value - Current flow from DUT to SUT
- **Auto** switch (continuously switch between the ports in the defined **interval** and **Duty**)

Figure 26 MCCI USB Switch 3201 UI Control Window



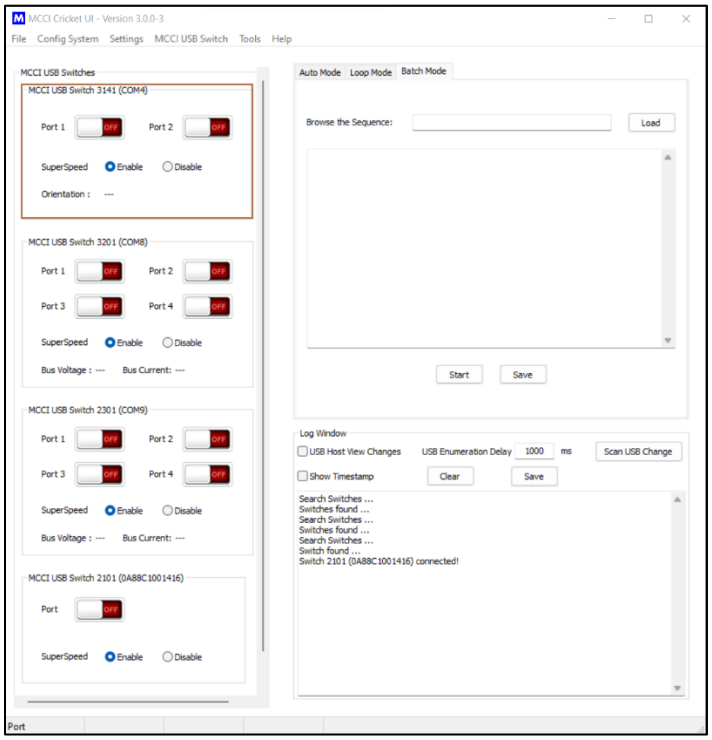
8.3 MCCI USB Switch 3141 UI Control Window

The control window of MCCI USB Switch 3141 appears in the UI, when the MCCI USB Switch 3141 device is selected from the `Select MCCI USB Switch Panel` as shown in Figure 27.

The control options of MCCI USB Switch 3141 are explained below:

- The **Port** buttons will get activated after the device is connected.
- **ON/OFF** switch to control the port state.
- Radio buttons to **Enable**/**Disable** Super Speed lines (NOTE: Supports ONLY SuperSpeed).
- **Check Orientation** button to show the Type-C connector connection (Normal/Flip)
- **Auto** mode button (continuously switch between the ports in the defined **interval** and **Duty)** to provide switching interval.

Figure 27 MCCI USB Switch 3141 UI Control Window



8.4 MCCI USB Switch 2101 UI Control Window

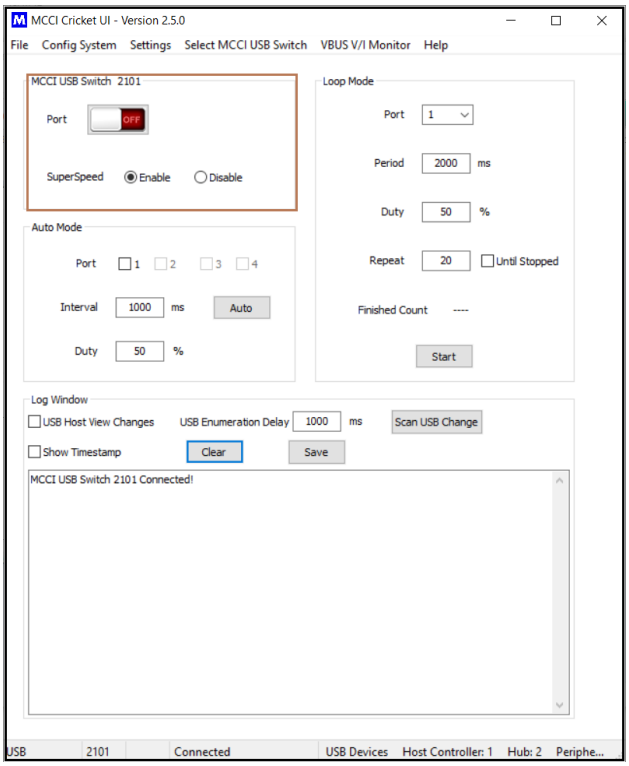
The control window of MCCI USB Switch 2101 appears in the UI, when the MCCI USB Switch 2101 device is selected from the `Select MCCI USB Switch Panel` as shown in Figure 28

The control options of MCCI USB Switch 2101 are explained below:

- The **Port** button will get activated after the device is connected.

- **ON/OFF** switch to control the port state.
- **Auto** mode button controls for selecting speed.
  - Radio buttons to select SuperSpeed (**Enable**) or High Speed (**Disable**) lines.

Figure 28 MCCI USB Switch 2101 UI Control Window



8.5 MCCI USB Switch 2301 UI Control Window

The control window of MCCI USB Switch 2301 appears in the UI, when the MCCI USB Switch 2301 device is selected from the `Select MCCI USB Switch Panel` as shown in Figure 29

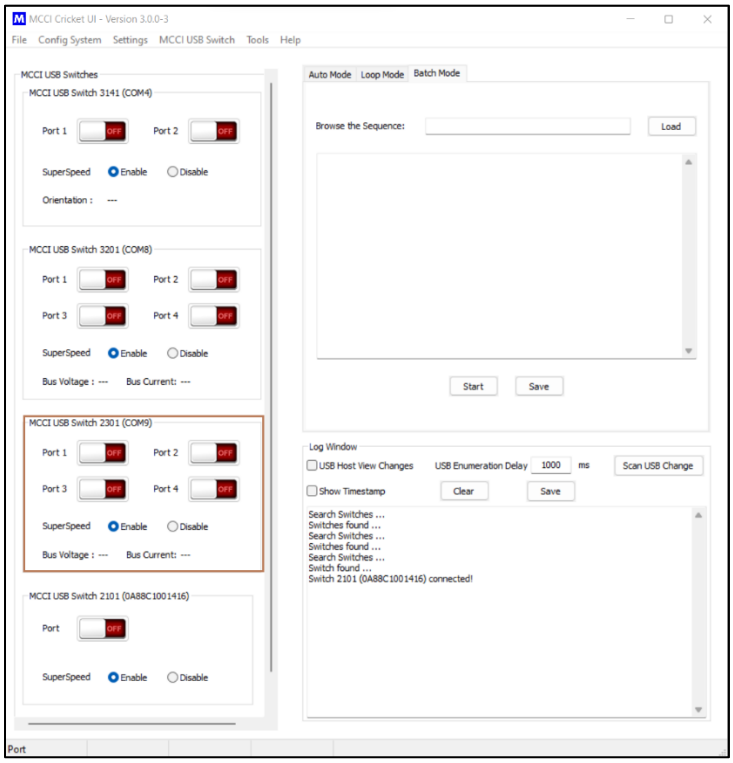
The control options of MCCI USB Switch 2301 are explained below:

- The **Port** buttons, which will get activated after the device is connected.
- **ON/OFF** switch to control the port state.
-
- Radio buttons to select Super Speed (**Enable**) or High Speed (**Disable**) lines.
- Volts and Amps button
  - Clicking on the **Volts** button will print the Bus Voltage
  - Clicking on the **Amps** button will print the Current Flow with the direction.
    - Negative value - Current flow from SUT (System Under Test) to DUT (Devices Under Test)

- Positive value - Current flow from DUT to SUT

- **Auto** switch (continuously switch between the ports in the defined **interval** and **Duty**)

Figure 29 MCCI USB Switch 2301 UI



8.6 Modes of Operation

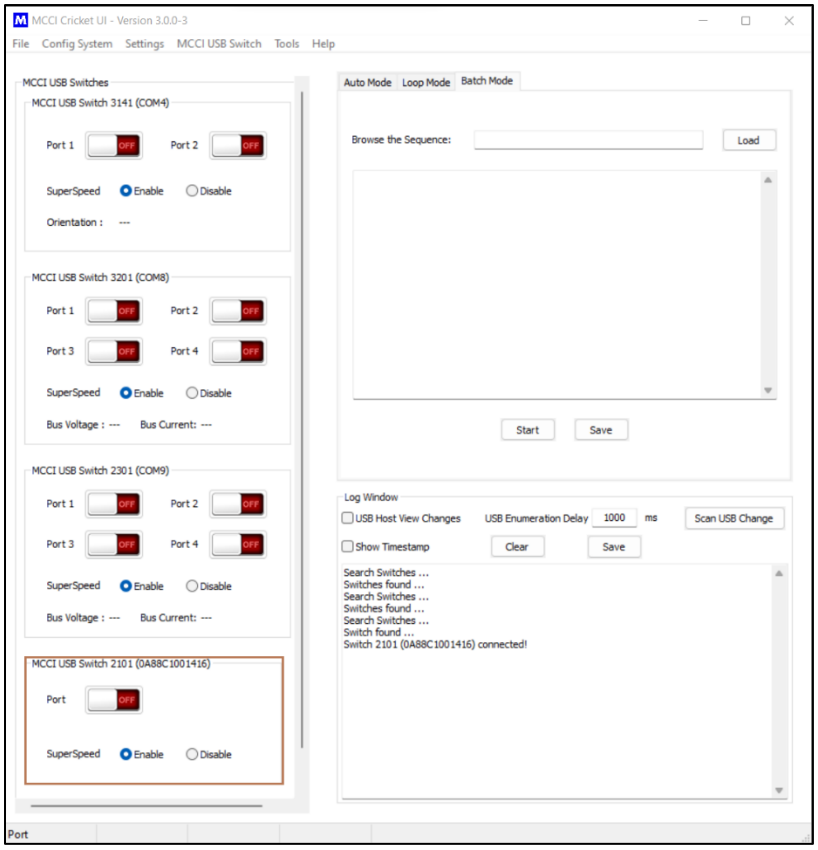
In order to control the device, the GUI has supported 3 modes of operation

- Manual Mode
- Auto Mode
- Loop Mode

This section contains the detailed explanation about the modes.

8.6.1 Manual Mode

Figure 30 Manual Mode



- The `Port` switch can be controlled manually using available button(s) in the UI as shown in the Figure 30.
- `ON/OFF` button is used to enable/disable the ports of the connecting device.
- `Enable/Disable` the Super Speed lines anytime using the radio button.
- Icon(s) and description for all MCCI USB Switch(s) are mentioned in Table 5.

Table 5 Manual Mode Control Options

Icons	Description
PORT <n>	Select the active port switch button.
ON/OFF	The selected port should be ON /OFF
Super speed Enable and Disable	Enable/Disable the Super Speed option

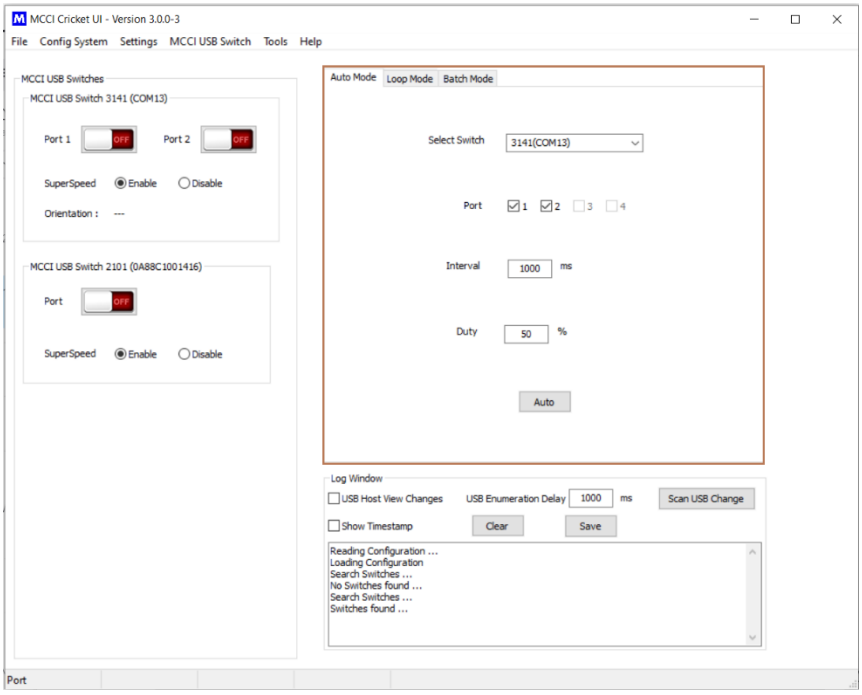
8.6.2 Auto Mode

- In GUI, the `Auto` mode is used to switch between the available `Port`(s) of the selected devices continuously with configured `Interval`/delay (Default is **1000ms**) and `Duty` (default is **50%**).

- Duty cycle is the ratio of time allocated for the switch to be ON compared to the time the load switch to be OFF.
- User can't change the Port and Speed in the middle of Auto mode execution
- This mode (MCCI USB Switch 3201) can Start/Stop using the `Auto` button shown in **Error! Reference source not found.**.
- This mode (MCCI USB Switch 3141) can Start/Stop using the `Auto` button shown in **Error! Reference source not found.**.

- This mode (MCCI USB Switch 2101) can Start/Stop using the `Auto` button shown in **Error! Reference source not found.**
- This mode (MCCI USB Switch 2301) can Start/Stop using the `Auto` button shown in **Error! Reference source not found.**

Figure 31 Auto mode Switch 3201/3141/2301/2101



```
Note: If USB Device Tree Changes option is enabled, Then Delay
specifies in that window is override the auto-mode interval.
```

The MCCI USB Switch 3201/3141/2101/2301 auto mode control options and description are mentioned in Table 6.

Table 6 Auto Mode Control Options

Control Option	Description
Port	Switching the port(s) between selection of port numbers
Duty	Percentage of ON time in total time period (ON + OFF).
Interval	Auto-mode switching interval (Default 1000 MS)
Auto/Stop	Start/Stop the auto mode
Select Switch	Select the Switch for loop mode operation.

< Select Port Number dialog box>

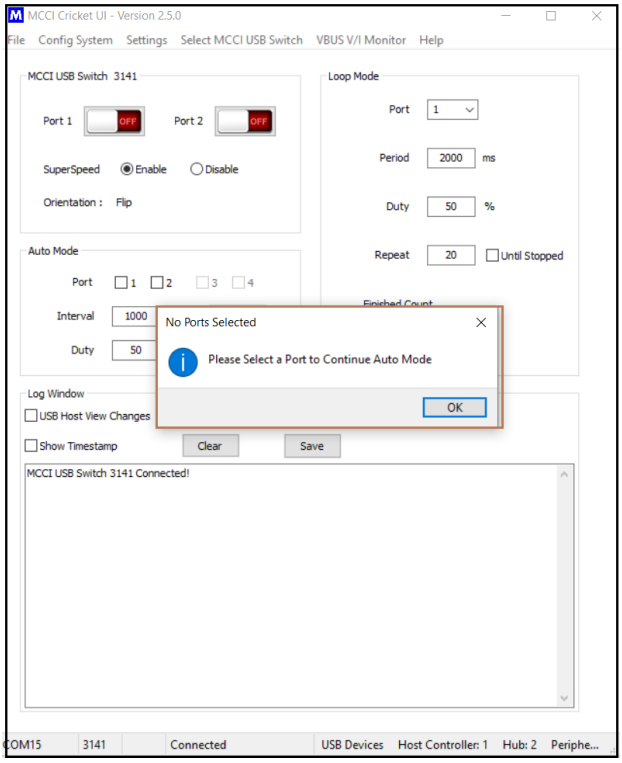
Whenever MCCI USB Switch(s) connected the corresponding port will be enabled.

Whenever switching the MCCI USB Switch(s) make sure to enable the particular port by checking and then switch the auto mode, *depends on port selection auto mode is working.*.

- MCCI USB Switch “3201” Enable the “four” ports.
- MCCI USB Switch “2301” Enable the “four” ports.
- MCCI USB Switch “3141” Enable the “Two” ports.
- MCCI USB Switch “2101” Enable the “one” ports.

Note: without selecting any port click on auto mode button warning message will occurred here open the one dialog window with name as *“please Select a port to continue Auto mode”.*

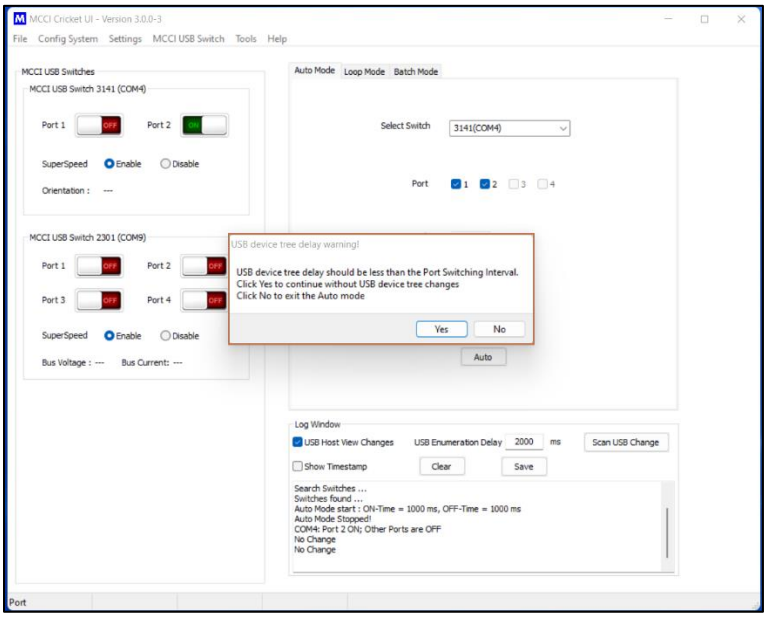
Figure 32 Port Selection Warning in Auto-Mode

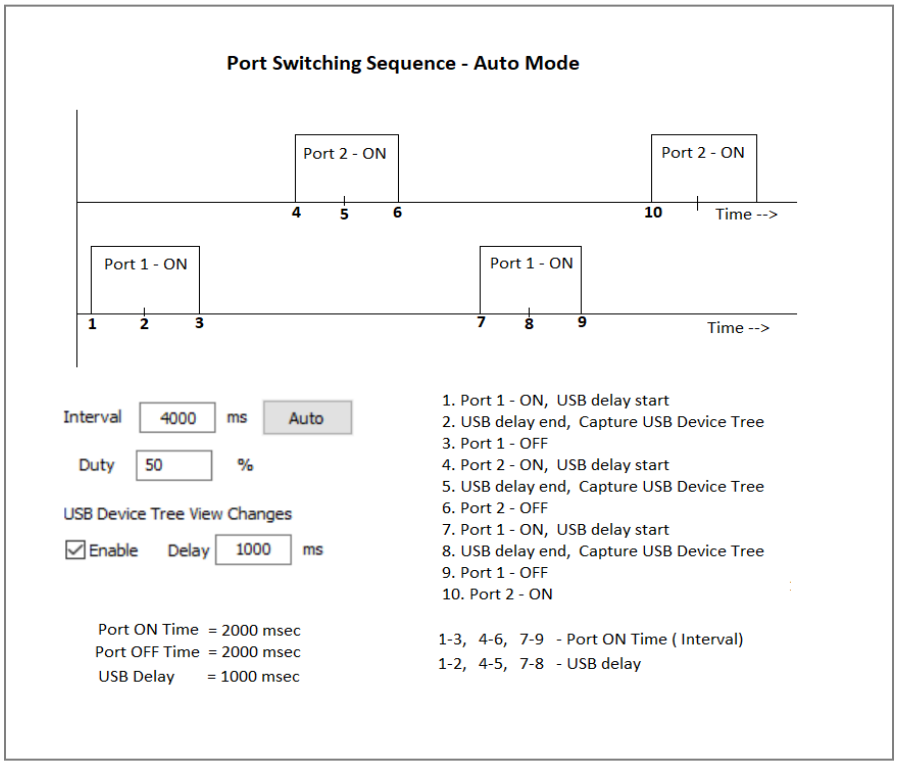


Whenever the `Auto` control is clicked, the program will compare the `Interval` time with the `USB Host Device View Changes` delay, if it is less than that, then warning message will be displayed with two options, the warning message shown in Figure 33.

Option 1: Click `Yes` – to start the Auto mode without USB Device Tree Changes option.
Option 2: Click `No` – to cancel the Auto mode start action, then the User needs to update the Interval time manually.

Figure 33 USB device tree delay warning-Auto Mode

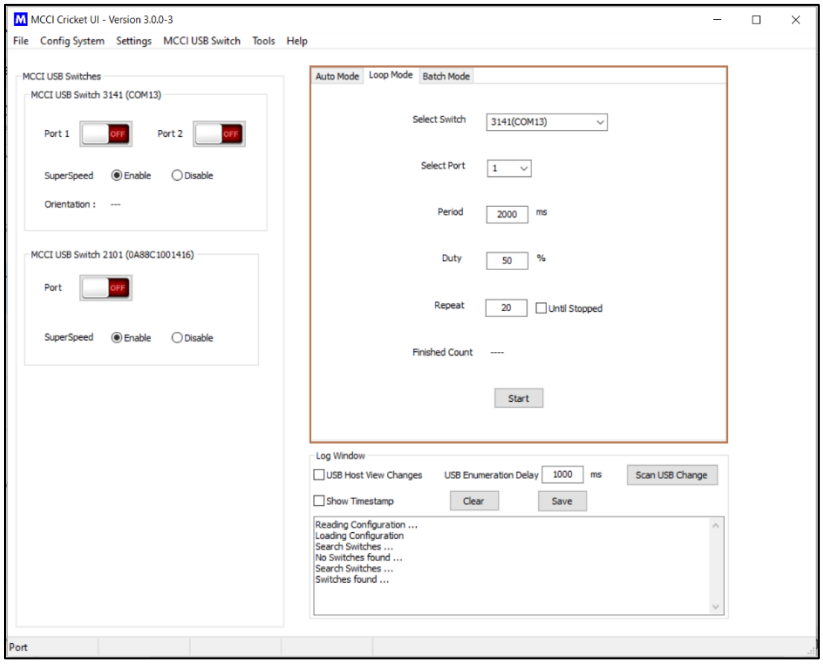




8.6.3 Loop Mode

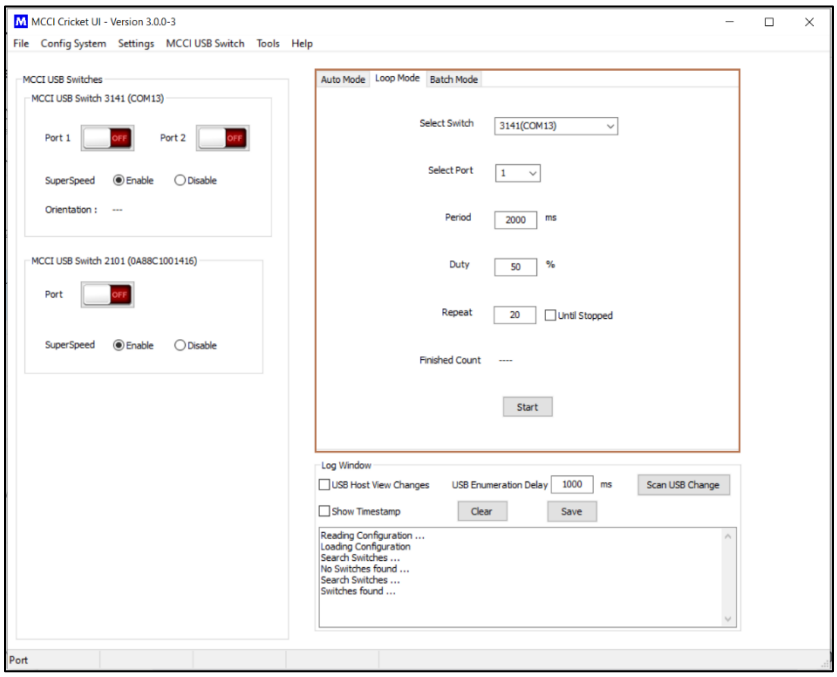
Here, the Loop Mode execution is similar in all devices as shown in **Error! Reference source not found.**.

Figure 34 Loop Mode Switch 3201/3141/2101/2301



- In the loop mode the connected device port numbers will be automatically detected, Select a port number from `Port` drop down menu, the detected port will be switched ON and OFF based on the repeat cycles given the `Period`, `Duty` will determine the ratio of the ON/OFF time for the selected port(s).
- Click on the `Start` button to start the loop mode operation.
- Click on the `Stop` button to stop the loop mode operation.
- User can't change the Port and Speed in the middle of loop mode execution.
- Loop mode control and its default values are shown in Figure 35.

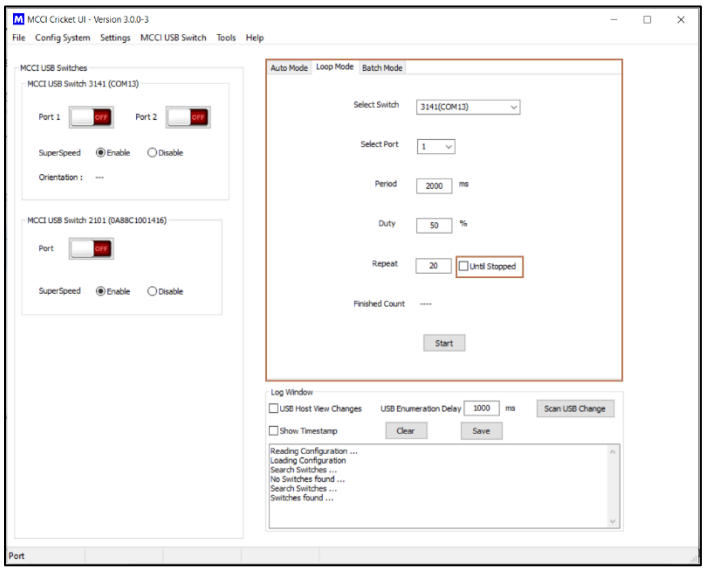
Figure 35 Loop Mode controls



8.6.4 Until Stopped

- In the loop mode the connected device port numbers will be automatically detected, Select a port number from `Port` drop down menu, the detected port will be switched ON and OFF based on the given the `Period`, `Duty` will determine the ratio of the ON/OFF time for the selected port(s).
- If the “Until stopped” checkbox is checked.
- The port will work depending on the configuration until the “`Stop`” button is pressed.
- Click on the `Start` button to start the loop mode operation.
- Click on the `Stop` button to stop the loop mode operation.
- User can’t change the Port and Speed in the middle of loop mode execution shown in Figure 36.

Figure 36 Loop Mode Controls "Until Stopped"



The loop control options and descriptions are mentioned in below Table 7.

Table 7 Loop Mode Control Options

Control Option	Description
Port	Select a port number from drop down menu.
Select Switch	Select the Switch for Auto mode operation
Period	Time between two successive ON/OFF cycle (MS).
Duty	Percentage of ON/OFF Time in total time period (ON + OFF).
Cycle	Number of cycles.
Until Stopped	Until stopped the loop.
Start/Stop	Start the loop / Stop the loop.

The MCCI Cricket UI Loop mode configuration default values and Descriptions are mentioned in Table 8

Table 8 Loop Mode Configuration Default Values

Parameter	Default Values
Port	Port are updated in depends on connecting device.
Period	2000 MS
Duty	50%
Cycle	20

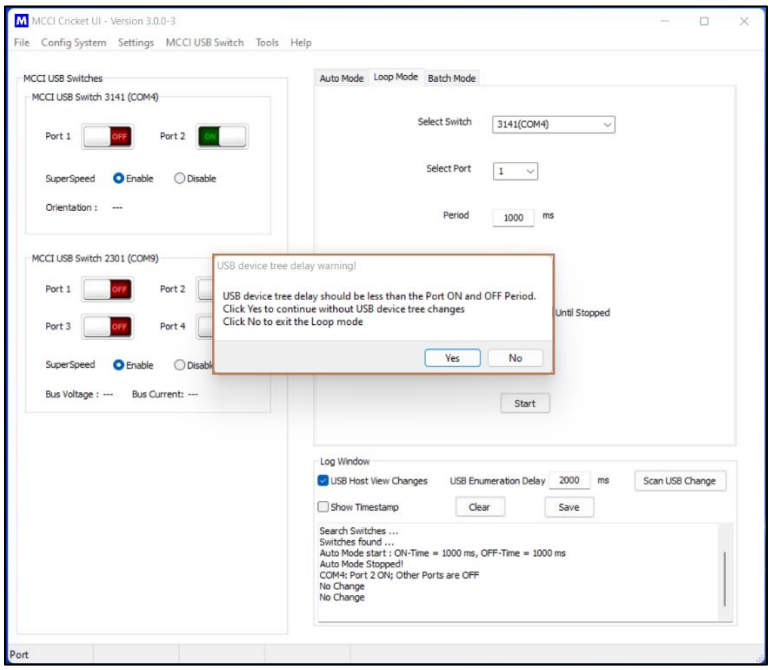
Note: If USB Device Tree Changes option is enabled, Then Delay specifies in that window is override the auto-mode interval.

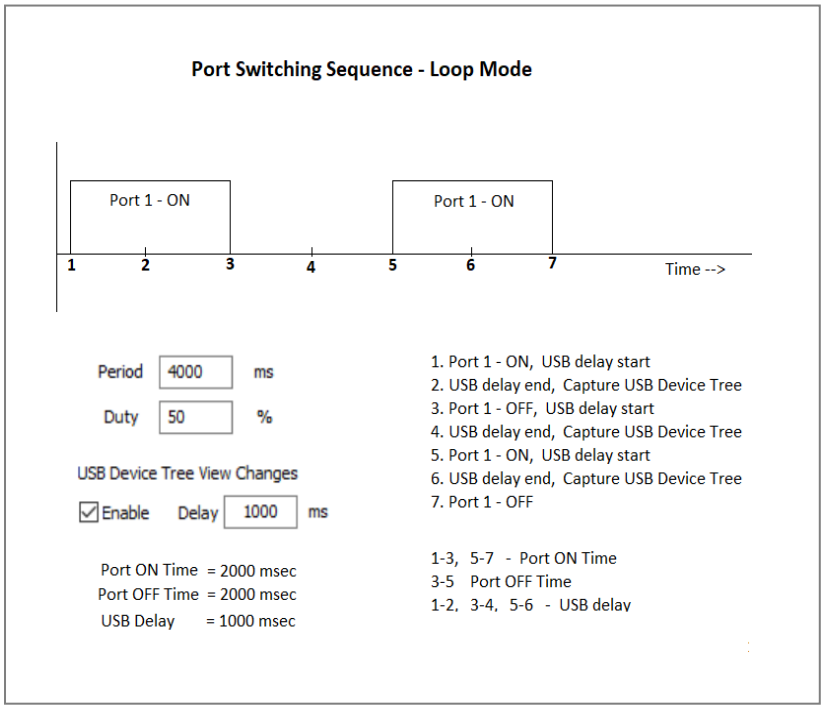
Whenever the Start control is clicked, the program will compare the `Period` (ON Time and OFF Time) with the `USB Device Tree Changes` delay, if it is less than that, then warning message will be displayed with two options, the warning message is shown in Figure 37.

Option 1: Click `yes` to start the Loop mode without USB Device Tree Changes option.

Option 2: Click `No` to cancel the Loop mode start action, then user need to update the `Period` and `Duty` manually

Figure 37 USB device tree delay warning-Loop Mode





8.6.5 Batch Mode

This mode provides customized way to control the USB Switches with simple instructions. Display the simple example script and explain about that example assigning of Switches, port, speed, delay and repeat.

- Click on the `Start` button to start the Batch mode operation.
- Click on the `Stop` button to stop the Batch mode operation.
- Click on the `Save` button to Save the Batch mode Script.
- A load button is used for import a specific batch mode script file in script log window.

9 Voltage and Current Plotting

9.1 VBUS V/I Monitor Menu

User can view the chart of VBUS Volt (V) and Current (A) data of the USB test device which is connected the selected USB Switch. Volt and Current data plotted in a single chart, Volt scale represented in the left Y axis and the Current scale represented in the right Y axis.

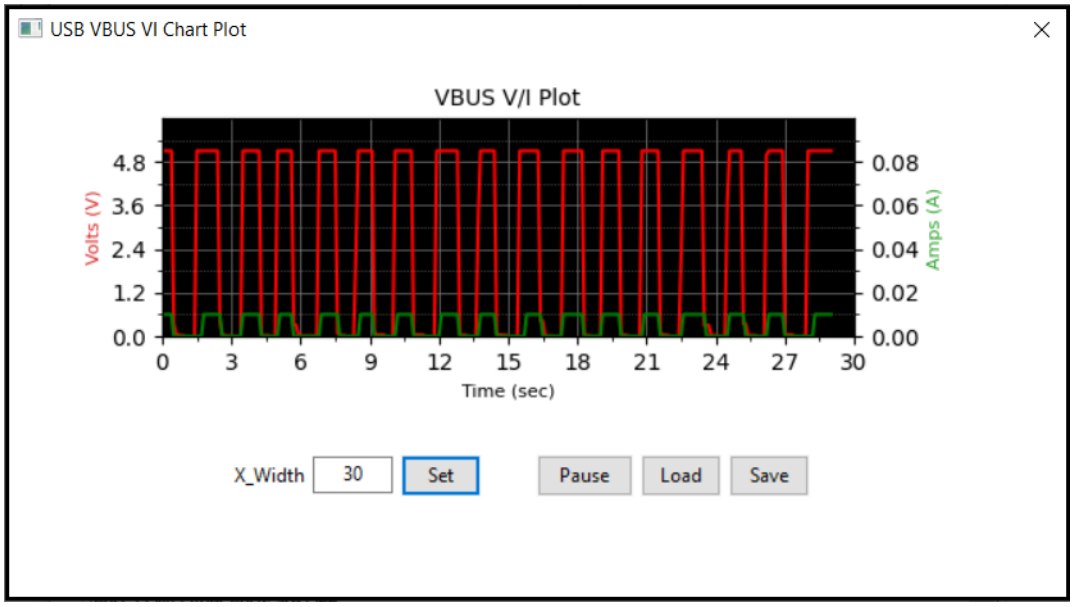
Open the application go to the Select ***MCCI USB Switch*** and select ***"VBUS V/I Plot"*** submenu, then a dialog window will appear with title name of VBUS V/I Plot. Here Display the plot for MCCI USB Switch 3201 and 2301 Connection Exerciser only shown in Figure 38

- Voltage data shows in Volts (V) and Amps (A) data shows in Amps with same time period of samples please shown in Table 9
- Times in Seconds Time(Sec).

Table 9 VBUS V/I Plot

Parameter	Default Values
X-Width	Total number of samples viewed in a chart, maximum limit of 500 samples
Pause	To Pause and Resume the live chart
Load	Load the selected CSV file and show Volt and Current data in chart
Save	Save the Volt and Current chart as CSV file.

Figure 38 USB VBUS VI Chart Plot



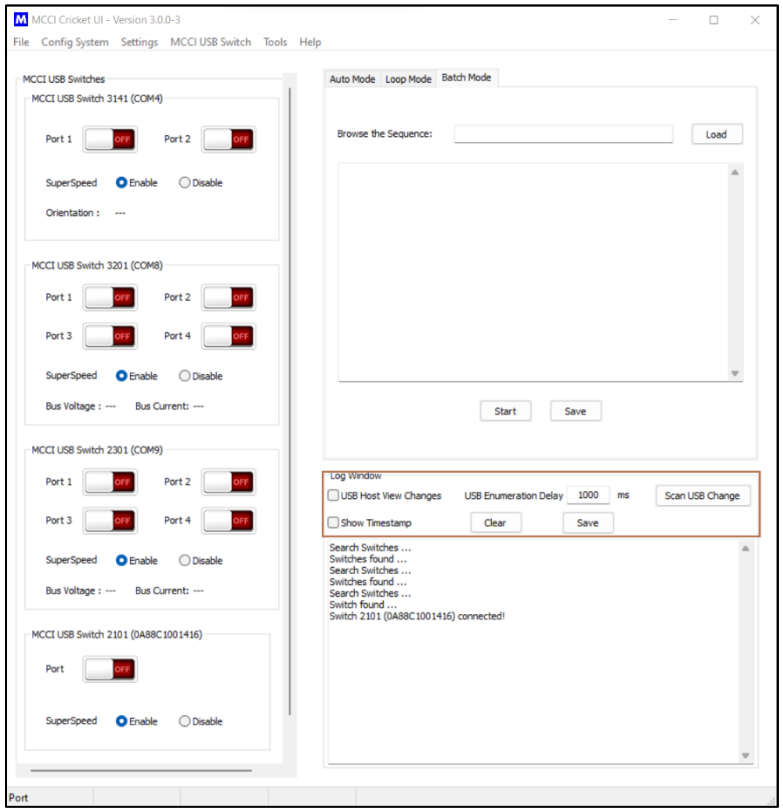
10 Log Window

The log window helps to log the device activities, it has an option to enable and disable the timestamp. Log window and plug-in/plug-out list of the USB devices after every port state changes in UI show as Figure 39.

- `USB Host View Changes`: to check the plug-in/plug-out list of the USB devices after every port state changes.
- `Show Timestamp`: Option to log the device information with timestamp
- `Show USB Tree View Changes`: Option to display the USB device tree view changes log in the log window

- `Clear`: Clears the log window
- `Save`: Save the log to a file in selected location.

Figure 39 Log Window



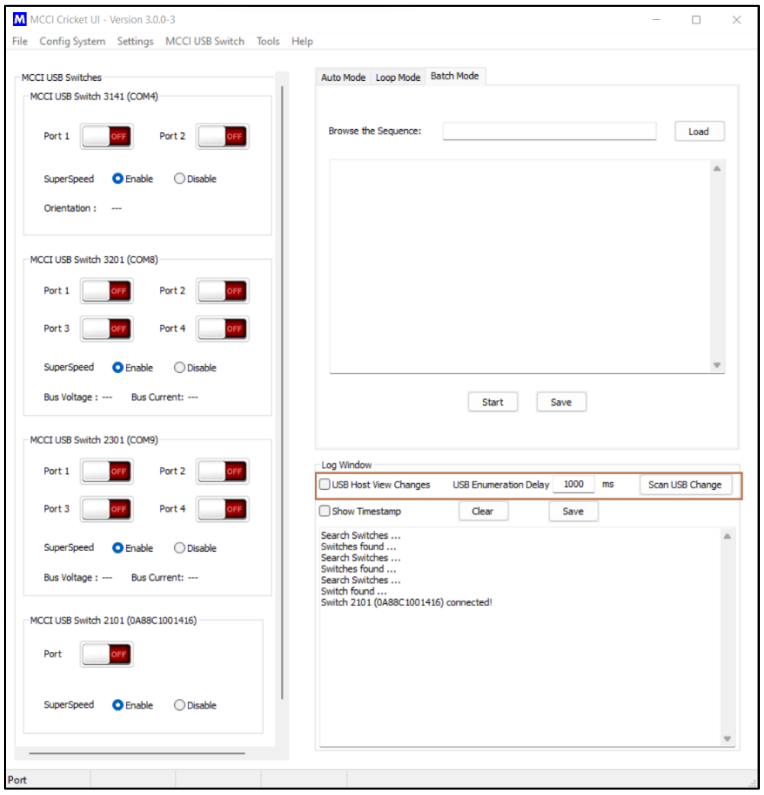
10.1 USB Host View Changes

This feature is convenient for the users to check the plug-in/plug-out list of the USB devices after every port state changes.

The options of the `USB Host View changes` are explained in this section. The respective UI window is shown in the Figure 40.

- `USB Enumeration Delay`: Minimum delay required for port connect/disconnect feature of the device (Depends on connected device enumeration time)
- `Scan USB Change`: Gets the list of connected USB device(s) and display the Device information in the “USB Device Tree View Changes” panel.

Figure 40 USB Device Tree View Change Control Options



10.1.1 USB Delay Override

Auto Mode:

Whenever `Show USB Tree View Changes` option is enabled, the program will compare the `Interval` time with the USB Device Tree View Changes `Delay`, if it is less, then the `Interval` time will be overridden by the USB Device Tree View Changes `Delay`.

For example, `Interval` = 1000 MS , `Delay` = 2000 MS, `Duty` = 50%, when the `Show USB Tree View Changes` option is enabled, then the `Interval` will be updated as 1500 MS by the program.

Loop Mode:

Whenever `Show USB Tree View Changes` option is enabled, the program will compare the `Period` (Port ON and OFF Time) with the `USB Device Tree View Changes` delay, if it is less, then the `Period` will be calculated based on the USB Device Tree Changes `Delay`, and the `Duty` to make both Port ON and OFF Time equal to the USB Device Tree Changes delay.

For example, `Period` = 4000 MS, Duty = 75%, Delay = 2000 Ms. Based on the `Period` and `Duty` Port ON Time = 3000 MS, Port OFF Time = 1000 Ms. When the `Show USB Tree View Changes` option

is enabled, then the `Period` will be updated as 8000 MS to make the Port OFF Time equal to the Delay which is 2000 Ms.

11 Disconnect & Close the Application

11.1.1 Disconnect

To disconnect a device, click the `Disconnect` option from the `Select MCCI USB Switch` panel and the selected device can be disconnected.

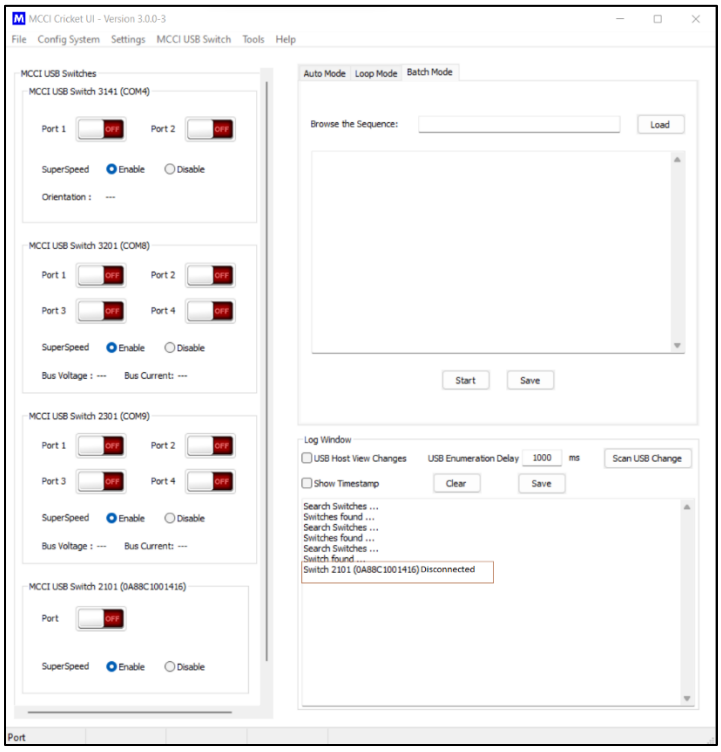
11.1.2 Close

To close the application, Click `Close` from the `File Menu` as displayed in. The application will be closed.

11.2 Disconnect Pop-up Notification

If the connected MCCI USB Switch 3201, 3141, 2101 or 2301 device is plugged out while notification message will pop up as **"Switch Disconnected!"** and the notification is shown in the Figure 41.

Figure 41 Disconnect Pop-up Notification



12 Getting Help

If you have a question about using the GUI usage or operation, please visit MCCI's support community. Feel free to post a question! We'll do our best to assist, and you may benefit from the experience of others. You may also post private questions to MCCI by opening a ticket or by sending email to techsupport@mcci.com.