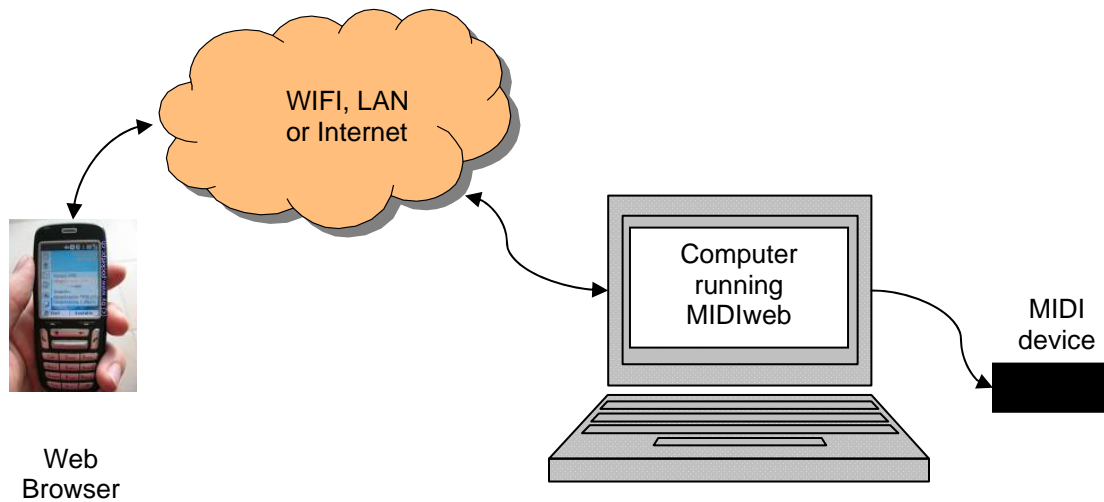# Chromakinetics MIDIweb Ver 1.0

MIDI Webserver

By Glenn Meader
glenn@chromakinetics.com
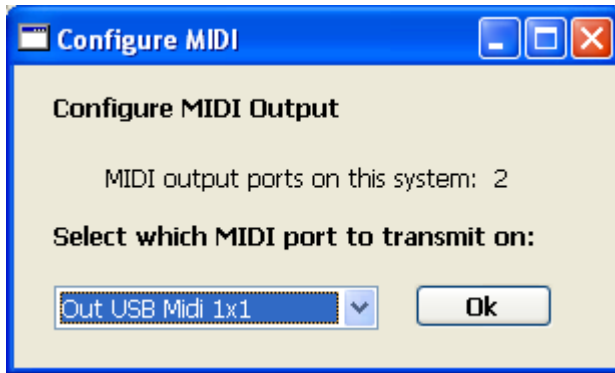www.chromakinetics.com
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MIDIweb is a program that allows you to control MIDI devices remotely via a web page over the Internet or a local area network (LAN). MIDIweb is a small, simple web server that responds to requests from web browsers such as Microsoft Internet Explorer and Apple Safari. You can use a Pocket PC or Palm or cellphone that has a web browser to control MIDI devices by surfing to the webpage provided by MIDIweb.

MIDIweb transmits MIDI using any Windows compatible interface MIDI interface. (it was tested with an M-Audio Uno).
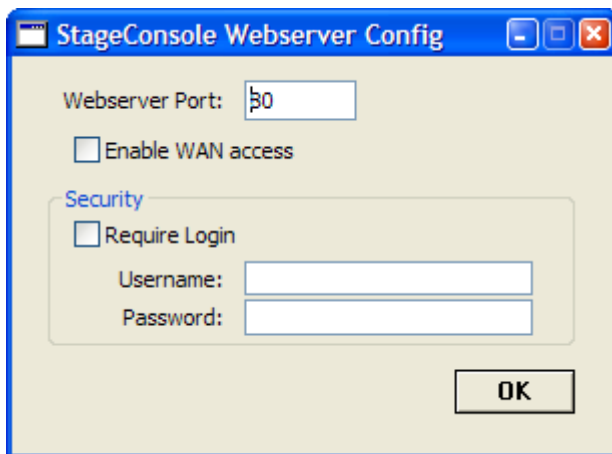
Setting the MIDI interface outout port
When you start MIDIweb, you need to set the port that the MIDI interface is connected to (Config menu).

Setting the Server port number

When you run MIDIweb, it starts listening on the net for HTTP requests. If you are running another webserver (such as IIS or Apache) on your computer, MIDIweb may fail to work.

Normally webservers listen on port 80. You can set the port number to another number if there is some conflict (as will be the case on Mac OSX and Linux due to security try port 8080 instead). Set the Webserver port using this dialog (from the Config menu)

If you get an Error 107, the port number you are trying to use is not usable. (more info on this below)
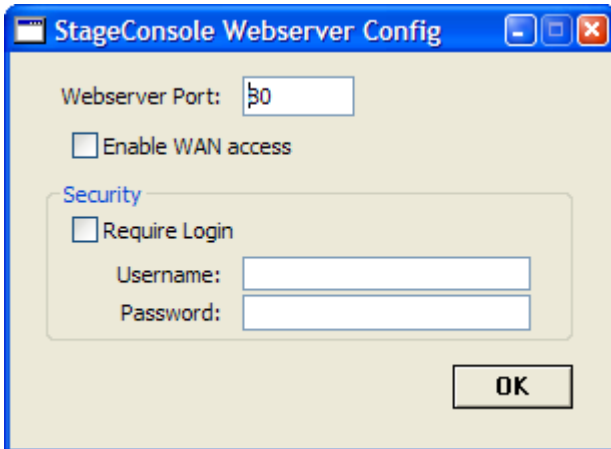
When you use a port number other than 80, you must include the port number – separated by a colon -- in the URL you give as the address in a browser. (e.g. for port 8080, give the following URL: **http://192.168.1.103:8080**)

WAN Access

By default, access from the WAN (Wide Area Network) Internet (outside your LAN router) is disabled. You can enable WAN access on the Webserver config dialog, then your WAN IP address will be tested and displayed. Your router firewall must be properly configured to allow outside computers on the Internet WAN to access the webserver port.

Web Security

You can enable Web security by setting the Require Login checkbox and providing a Username and Password. The web browser will then prompt for these the first time you attempt to submit a command. It will display the page and help regardless of security – you just cant submit commands without the proper username and password.

Accessing the webserver from a browser

MIDIweb detects the LAN (and WAN IP addresses if WAN access is enabled and it can get through any firewalls) of the computer it is running on and displays them so that you know what URL address to enter into your browser. These addresses are the large numbers in the figure below.

The LAN address is the local Ethernet address (if you have a router or are using WIFI locally).
The WAN address will be displayed only if WAN access is enabled. It is the address of your computer on the World-Wide-Web if you are connected to the Internet.

 If you are connecting locally (the most likely scenario,) use the LAN address as your URL for your browser address. If you have more than one Ethernet adapter, multiple addresses will be shown. In the figure above there are 2 Ethernet adapters, a WIFI

adapter and a normal CAT-5 wire adapter; numbered 0 and 1 respectively. The address 0.0.0.0 is the wired LAN adapter (which is not connected to anything).

If you want to test or control things on the same computer you are running MIDIweb from, you can use the following shortcut URL: **http://localhost**
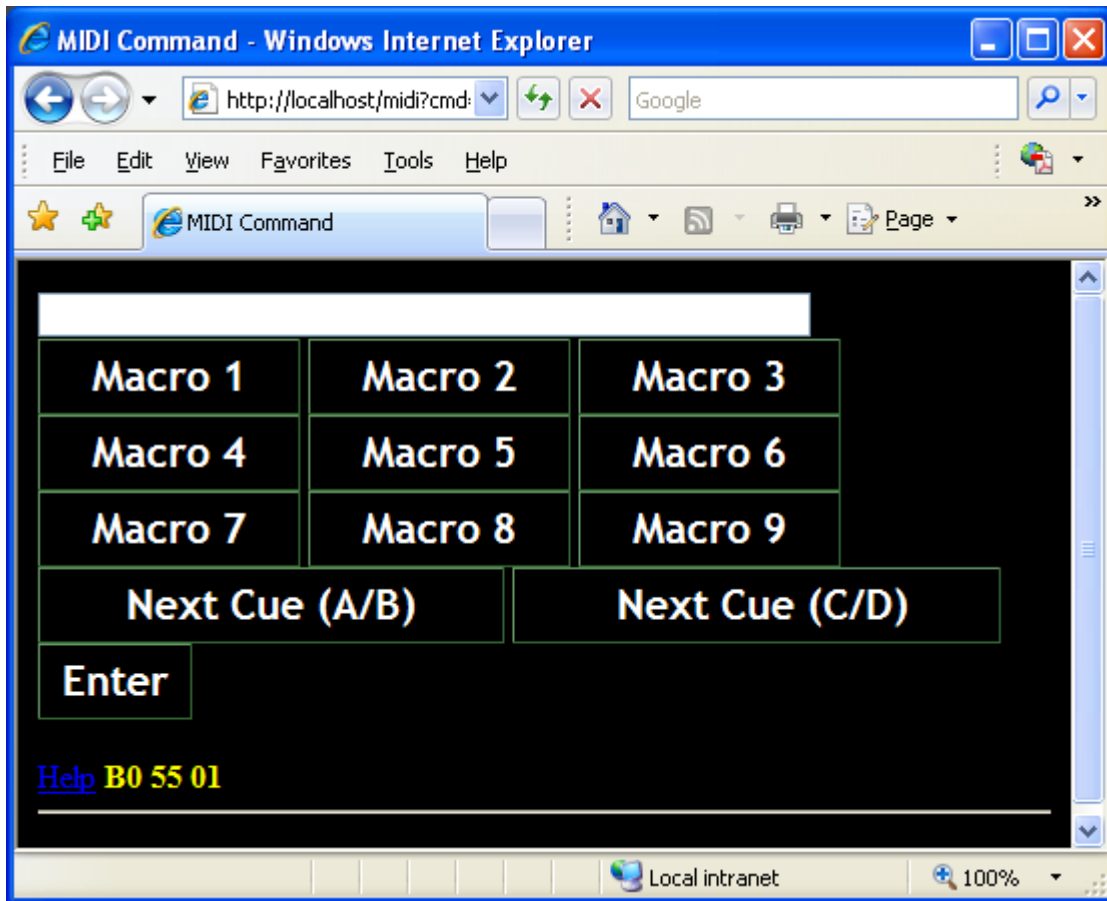
What the browser displays

Here is a browser window, running on another computer displaying the default page that MIDIweb sends when you go to the URL **http://192.168.1.67** (use the correct numbers for *your* computer as given in the MIDI Webserver window, above figure)

This web page is user-configurable. If you have a file named "MIDIform.htm" in the same folder as the MIDIweb program is installed, that file will be displayed instead of the default page. If you don't want to use it, rename it to something else.

The included sample named "MIDIform.htm", is a complex entry form for use with Pocket PCs with buttons for touchscreen access. It displays in a browser like this:

If you know HTML and Javascript, you can edit it to customize the web page that MIDIweb displays. You can edit it with a text editor such as Notepad to change the labels on the buttons and to change the MIDI command each button will send. Here's the HTML code for a button:

```
<input type="button" name="key1" value=" Macro 1 " onClick="upd('B0 55 01')" class="btn" />
```

Just change the
`" Macro 1 "`
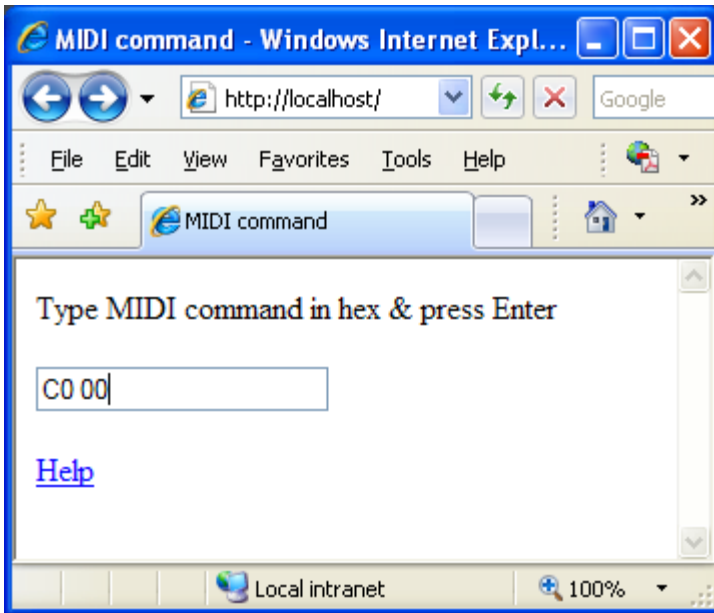 to whatever button label you want and change the
`'B0 55 01'`
to the 6 hex digits of the MIDI command you want associated with that button.
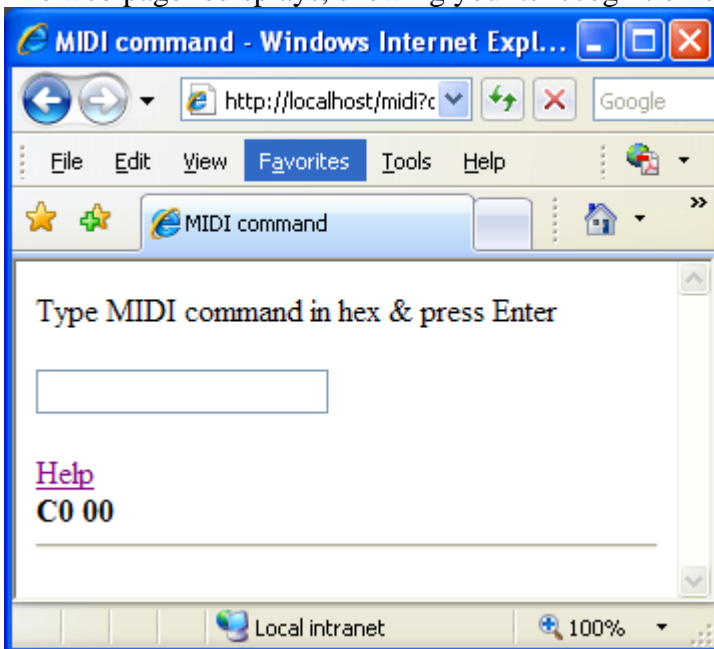
Controlling MIDI devices using a Web Browser

A simple form is displayed by the browser. You can now enter a 4 or 6 digit hex MIDI command in the text field. Press Enter to submit the command.
Here, we are giving a MIDI Program Change message, MIDI channel 1, program 0:

The command will be executed by the MIDIweb server and change the patch on the MIDI device connected to it.

Here is the result of entering the following command: **C0 00**
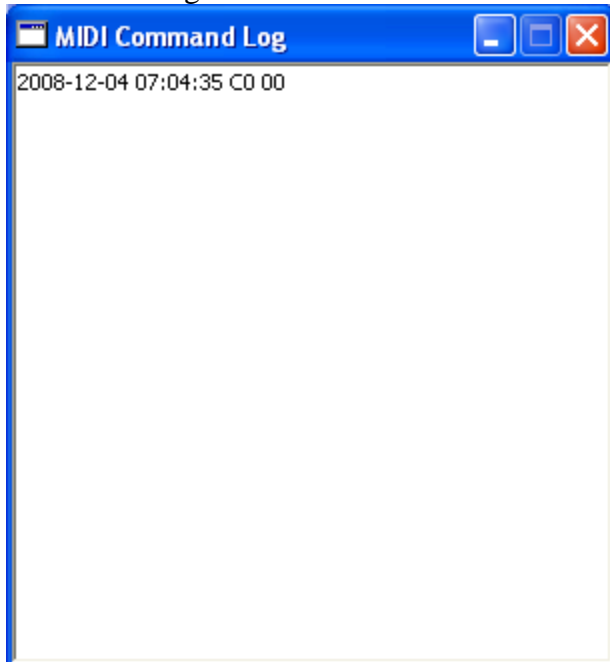The web page redisplays, showing you its recognition of the command.

Clicking on Help gives a page detailing the MIDI command syntax.

Seeing the results on the Webserver computer

```
MIDI Webserver: none                        _ □ ✕

File  Edit  Config  View  Help
102: Disconnected
    Midi Output Port: Out USB Midi 1x1
        Socket Port: 80
    LAN IP Address: 0: 192.168.1.67
                    1: 0.0.0.0


C0 00

C0+00

Results
```

And in the Log window

```
MIDI Command Log                            _ □ ✕

2008-12-04 07:04:35 C0 00
```

This window will display on the computer running the webserver.

More into on Error 107

107 InvalidPortError This error means that the port you specified is invalid. This could mean that you entered a port number less than 0, or greater than 65,535. It could also mean that you do not have enough privileges to bind to that port. This happens under Mac OS X and Linux if you are not running as root and try to bind to a port below 1024. You can only bind to ports less than 1024 if you have root privileges. A normal "Admin" user does not have root privileges.

MIDI Command Syntax:

A command is a text string that is a MIDI command (in hexidecimal)
The text string consists of pairs of hex digits separated by spaces. The Windows
Calculator (in Scientific view) can help you convert decimal to Hex.

Note On message format

9n kk vv
9 Note on status
n MIDI channel number (0-F)
kk Key number (00-7F)
vv Note on velocity (00-7F) [00=Note off]

Control Change message format

Bn kk vv
B Control change status
n MIDI channel number (0-F)
kk Control number (00-7F)
vv Control value (00-7F)

Program change message format

Cn kk
C Program (patch) change status
n MIDI channel number (0-F)
kk Program number (00-7F)

Pitch bend message format

En ll mm
E Pitch bend status
n MIDI channel number (0-F)
ll Least significant 7 bits of pitch bend value (00-7F)
mm Most significant 7 bits of pitch bend value (00-7F)

Example MIDI commands:

Note On message, MIDI channel 1, note 60, velocity 127:
`80 3C 7F`
Control Change message, MIDI channel 1, controller 77, param 0:
`B0 4D 00`

MIDI Show control

Message Format
F0, Start of System Exclusive Message
7F, Start of message
cc, Send Device number or **7F** = 'All Call'
02, Indicates System Exclusive Message is MIDI Show Control
01, Lighting command, or **7F** = 'All Types'
mm, command: **01**=Go, **02**=Stop, **03**=Resume, **07**=Fire
nn, Cue number. Cues numbered 0-9 are represented in an MSC hex **30**-**39**. For decimal point cues, the point character is represented by hex **2E**.
00 Delimiter
xx, cuelist number: **31** or **32**
00, Delimiter
F7, End of System Exclusive Message

The following MSC examples use device number 66 (42 hex):

Go (cue zero, cuelist 1=A/B fader)
F0 7F 42 02 01 01 30 00 31 00 F7
Go Cue number 1 A/B fader:
F0 7F 42 02 01 01 31 00 31 00 F7
Go Cue 5.6 A/B fader:
F0 7F 42 02 01 01 35 2E 36 00 31 00 F7
Go Cue 987, cuelist 2= C/D fader:
F0 7F 42 02 01 01 39 38 37 00 32 00 F7
Fire Macro 3:
F0 7F 42 02 01 07 03 F7