Using the Synergy Controller WebTouch Remote

Introduction

Every Synergy Controller including the ¼ DIN Synergy Nano, Synergy Quattro, and Synergy Micro 2 comes equipped with a built-in web server using Tidal Engineering's Web Touch™ Remote technology (Pat. Pending). This technology provides a web browser user interface that is identical to the local touch screen interface on the environmental chamber (Figure 1). Operators can use this feature to remotely monitor chamber settings and readings. Technicians can use this feature for remote troubleshooting. This application note explains the setup and operation of this powerful remote control technology.
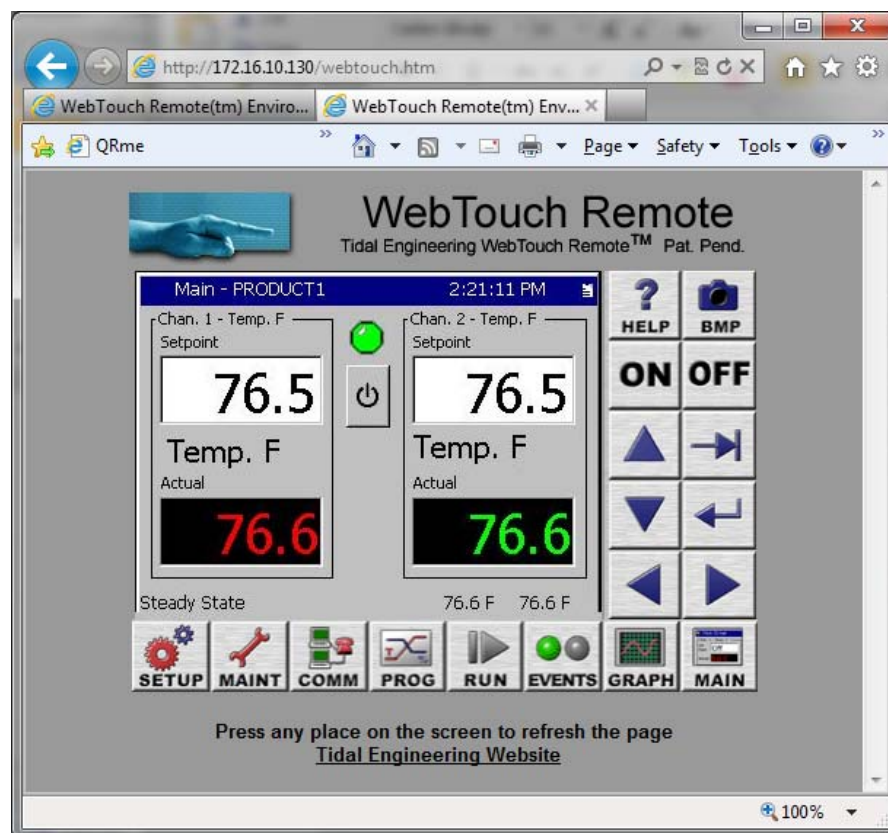

Figure 1 Synergy Controller Webtouch Remote Interface

Configuring the Synergy Controller Web Server

To use the web server, you must perform a one-time set up. This setup includes:
- Registering the server,
- Enabling the server,
- Providing a user name and password for the server
- Establishing a TCP/IP connection using the Synergy Controller's 10/100 BaseT Ethernet port.

Establishing a TCP/IP connection

The Synergy Controller Web Server can be used on an office or factory network to provide remote access and control. The Synergy Controller can also be accessed through the Internet provided your network is configured for remote access (Check with your Network Administrator to see if this is possible on your network). In addition, multiple Synergy Controllers can also be setup with a small router to connect directly to a PC.

IP Configuration by DHCP

Each Synergy Controller must be configured with an IP address and a net mask. Dynamic Host Configuration Protocol (DHCP) does this configuration automatically. A device on the network may act as a Dynamic Host Configuration Protocol (DHCP) server. A DHCP server stores a list or pool of IP addresses, along with other information (such as gateway and DNS addresses) that it may assign to the other devices on the network.

IP Configuration by DHCP using a LAN

DHCP servers are available on most office and factory network servers. Contact your network administrator to verify that a DHCP server is available and enabled. The Synergy Controller will display the address it was assigned in the Comm/Ethernet screen. If the address is not 0.0.0.0, then it has been assigned an address by the DHCP server automatically.

Registering the Web Server

Press the COMM button on the bottom tool bar to navigate to the COMMunications screen. Select the "Ethernet Connections" folder (Figure 2a) and then the "Web Server" subfolder (Figure 2b).

To enable you controller's web server you must first enter a Registration Key (Figure 3). Contact Tidal Engineering (www.TidalEng.com) to obtain your Registration Key.
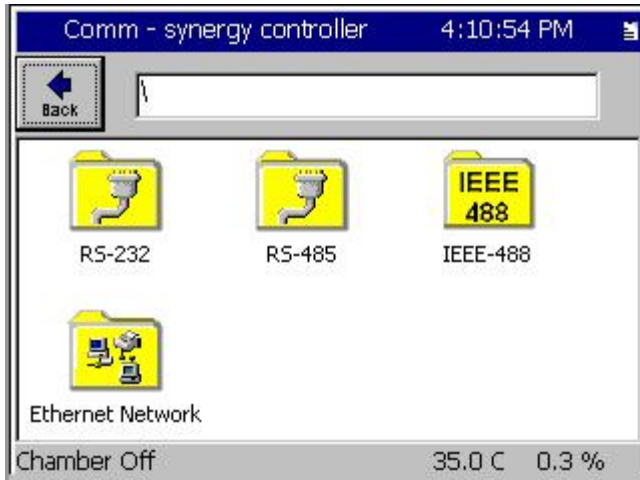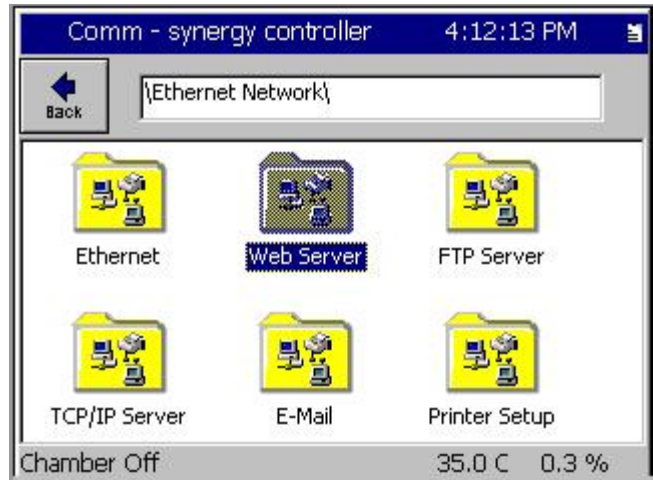
Figure 2a COMM Screen

2b Ethernet Network Folder

Figure 3 Registration window

Click on the Registration Key text box to display the keypad.

Figure 4 Keypad

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Enter the registration code you received from Tidal Engineering Corporation using the keypad. When Alpha is selected, pressing a key will cycle through the letters printed on that key, similar to the keypad on a cell-phone. Please note, if the next letter in the registration key is on a different button, you can go directly to that button, however, if the next letter is on the same button, you *can* accept the entry and advance to the next character by pressing the "Next -->" button.

If Numeric is selected, pressing a key displays the number printed on that key. If Alpha-Num is selected, the key will cycle through the letters then the number on the key.

To clear one character, use the Back Space (Bk Sp) button. To clear all of the characters, use the Clear button. When you are finished, press OK. To cancel, tap Cancel. You will return to the previous screen and your code will appear in the Registration Key box (Figure 5).
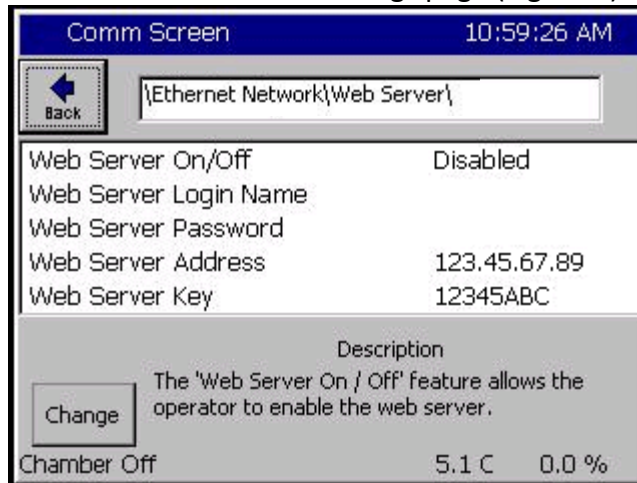

Figure 5 Registration Key box

Tap Register to continue.

Figure 6

The Synergy Controller will display a message box indicating that the web server key was successfully registered. Tap OK to proceed to the Web Server Settings page (Figure 7).
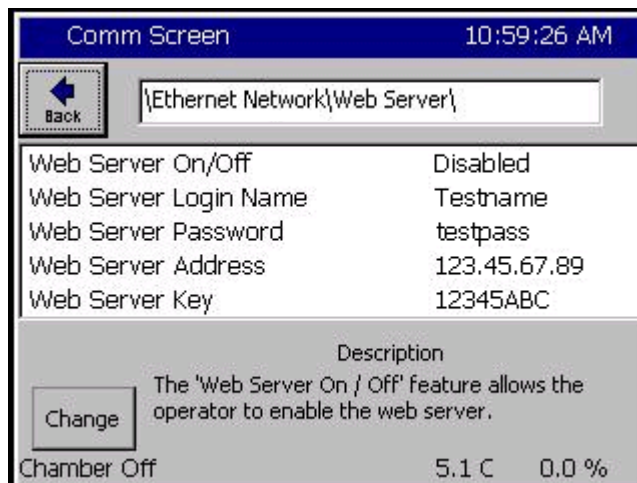

Figure 7 Web Server Settings

Assuming you have successfully registered the web server, you can now set a Login Name, set a Password and enable the Web Server. To change the Web Server On/Off value to Enabled, select the line in the Web server settings screen to highlight it and then tap the Change button.
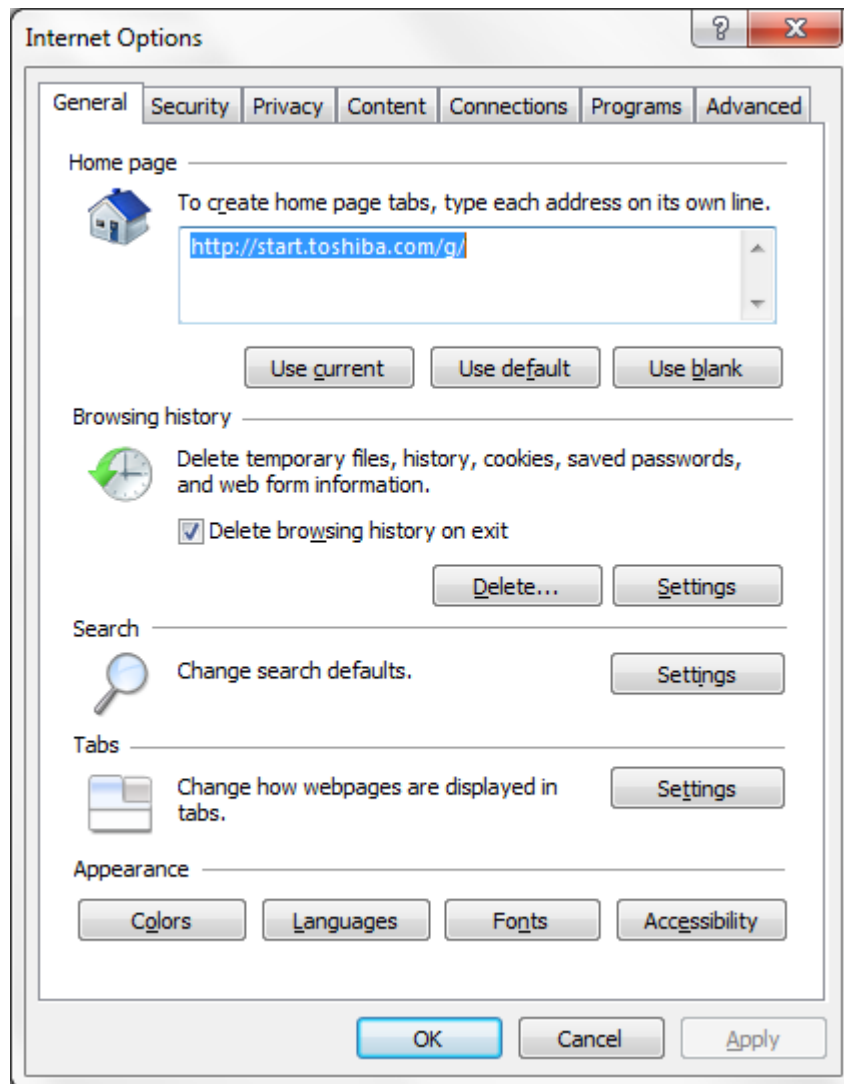
Network Security

The Synergy Controller web server requires a username and password that is managed from the touch screen. To set the user name and password, select Web Server Login Name and tap the Change button. Enter your Login Name on the keypad. Tap OK to return to the settings page. Repeat the process for the Web Server Password. You will need this name and password when you access the Synergy Controller remotely via your web browser (Figure 8). The unit's web server is now ready for use.
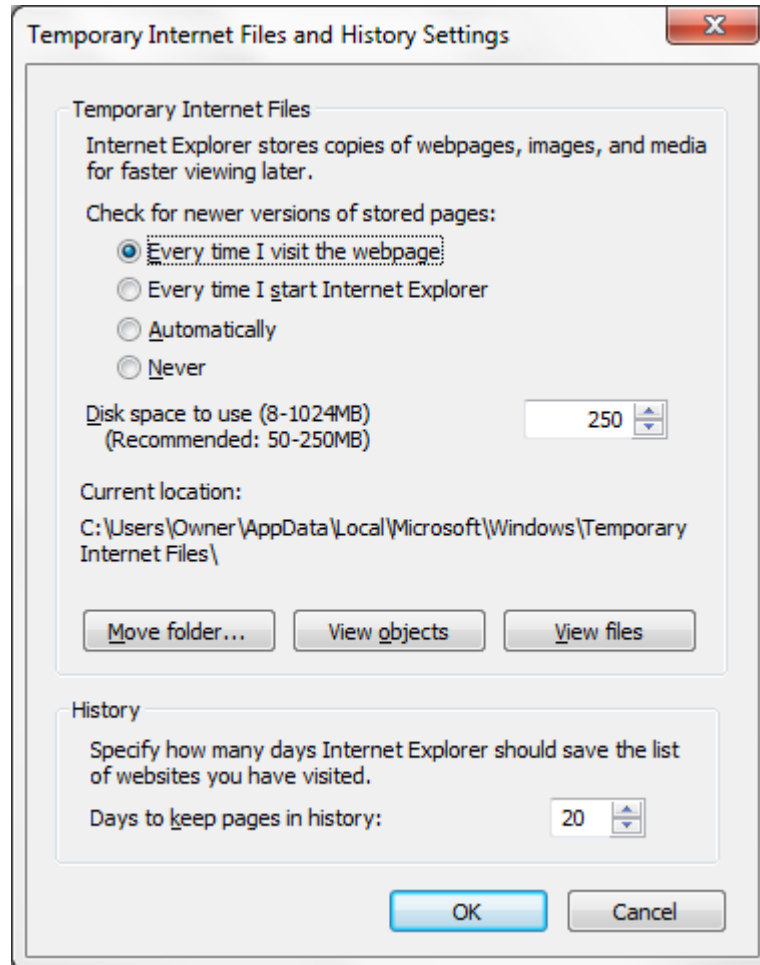

Figure 8 Web Server Settings

Configuring Internet Explorer

The web server works seamlessly with the latest versions of Apple Safari, Google Chrome, and Mozilla Firefox however, if you are using Microsoft Internet Explorer, you must adjust the default settings. To do so, Open Internet Explorer and from the Tools menu, select Internet Options. (Figure 9).

Figure 10 Internet Explorer Internet Options

Click the "Settings" button under Browsing History.

Figure 10 Internet Explorer Temporary Files Settings

In the Settings screen, select the "Every time I visit the webpage" option (Figure 10). Press OK to save the configuration.
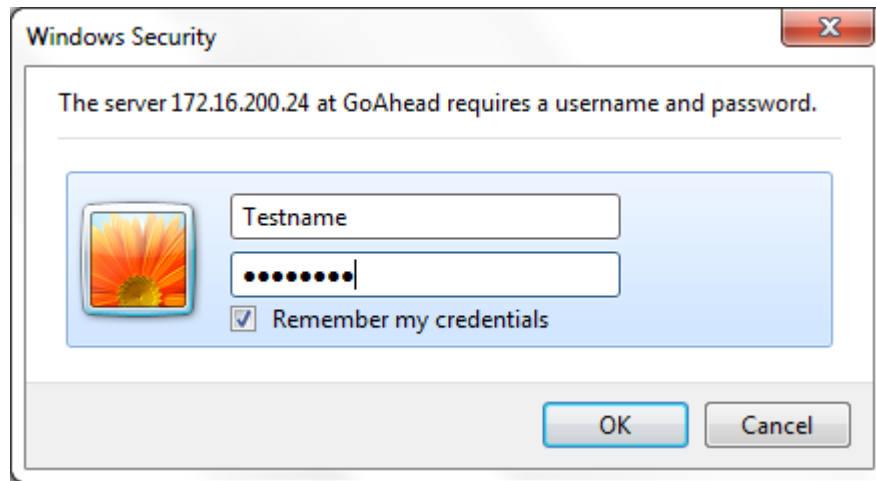
Caution: The Synergy Controller may work unpredictably if this setting is not changed. Mouse clicks on the Browser window will be sent to the controller but the screen images will not update. Buttons and functions may, therefore, be pressed unintentionally.

Accessing the Synergy Controller via the Web

To access the controller via the web, open Internet Explorer and type your controller's IP address in the address bar. You can find the controller's IP address in the Web Server folder under the COMM button (Figure 9).

For example, if the Web Server Address on the controller is 170.23.10.10 then type http://170.23.10.10 in Internet Explorer's address bar.

After entering the address, press Enter to navigate to your controller. The next screen you will see is the Internet Explorer Network Password screen (Figure 11).

Figure 11 Internet Explorer Network Password screen

Enter the user name and password you specified in the Web Server Folder on the controller (Figure 8). You may want to check the "Remember my credentials" box to save the name and password in your computer's password list. If you don't you will be prompted for a password each time you open a new session. After you have successfully logged in, you will see the web interface exactly as it appears on the controller.

Note: If you enter the incorrect password, shutdown the Internet Explorer window and re-start it. Otherwise, Internet Explorer will not ask for the password again.

Using the Web Interface

The Synergy Controller Web Interface virtually identical to the Synergy Controller Touch Screen interface. It displays all of the same buttons and the control screen is identical to the one on the unit. Use the mouse pointer as you would use your finger on the touch screen. At each click, the screen accepts your command and automatically refreshes. If you want to refresh the screen click on the blue title bar.

About the Synergy Controller Family

Tidal Engineering's Synergy Controllers, both the Synergy Micro 2 and the ¼ DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition. They combine the functions of a chamber controller and a data logger and are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards.

Synergy Controller feature highlights includes:
➔ Color touch screen
➔ Ethernet, RS-232 and GPIB communications
➔ Built in 100 MB Data logger with USB drive support
➔ Data Acquisition, up to 64 T-type thermocouples (Optional)
➔ Built-in Web Server for remote control; WebTouch Remote ™
➔ Compatible with Synergy Manager for PC based control, monitoring and programming.
➔ Built-in FTP Server for factory automation and test and measurement applications

For more information regarding these controllers please see the full Synergy Controller Technical Manual on our website at http://www.tidaleng.com/synergy.htm

About Tidal Engineering

Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems.

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