

**NETCLOCK
MODEL 9189
MANUAL ADDENDUM
SOFTWARE v2.3.0 TO v2.3.1**

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1 Changes for v2.3.0 to v2.3.1

This addendum to the operations and maintenance manual for the Spectracom NetClock® Model 9189 (current to software version 2.3.0) describes the changes made to software features for version 2.3.1. These changes include additions and enhancements to the Web User Interface (Web UI), to the command line, and in SNMP.

2 Network and Web User Interface Changes

The user may now enable and disable all network interfaces. The HTTPS port has been added to the Web UI and may be controlled on the System Setup web page on the Network tab.

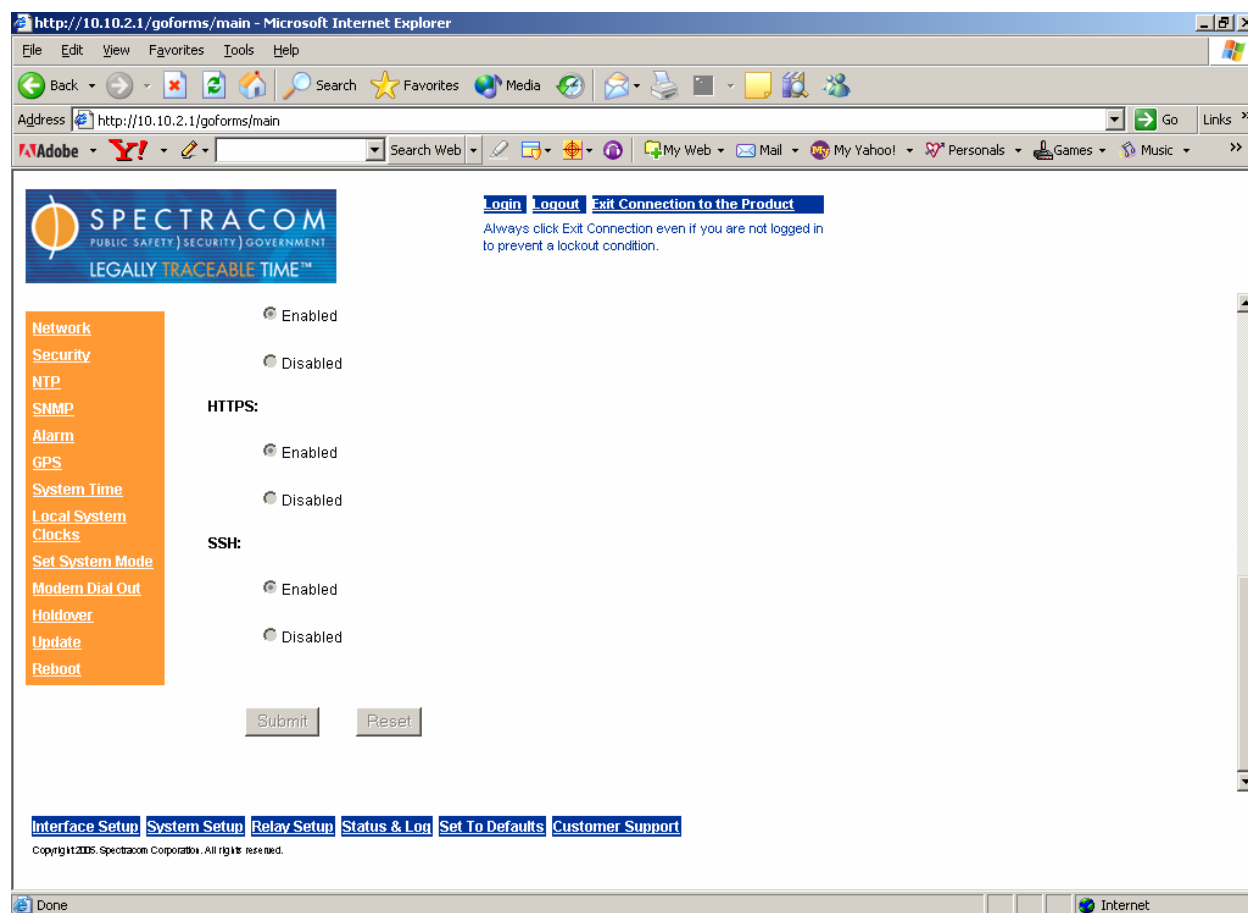


Figure 2-1: Enabling and Disabling Network Interfaces

Allowing the user to enable and disable at will all network interfaces provides greater security and stability of the NetClock in hostile network environments. It also allows users to comply with corporate security policies regarding network access.

2.1 Command Line Changes

The network interface command line now allows the user to enable and disable all ports for Telnet, FTP, HTTP, HTTPS and SSH.

The new commands for the network interface are:

telnet net telnet [yes,no] – Enable or disable telnet on port 23
ftp net ftp [yes,no] – Enable or disable ftp on port 21
https net https [yes,no] – Enable or disable https on port 443
sshd net sshd [yes,no] – Enable or disable ssh on port 22

2.1.1 net telnet

This command allows user to enable or disable the telnet port. Input yes to enable no to disable. Input **net telnet yes** to enable and **net telnet no** to disable.

2.1.2 net ftp

This command allows user to enable or disable FTP the port. Input **net ftp yes** to enable and **net ftp no** to disable.

2.1.3 net https

This command allows the user to enable or disable the HTTPS port controlling access to the secure web server. Enter **net https yes** to enable and **net https no** to disable.

2.1.4 net sshd (Includes SSH, SCP, and SFTP)

This command allows the user to enable or disable the SSH port controlling access to secure SSH protocols SSH secure shell, SCP secure copy, and SFTP secure file transfer. Input **net sshd yes** to enable and **net sshd no** to disable.

2.2 Web Server Timeout

The manner in which the GoAhead Web Server functions requires users to terminate Web UI sessions by clicking “Exit Connection to the Product”. Clicking the “X” button on the browser does not end the session, but closes the window – which means the user cannot log in again until the session expires. In some versions of the software, this is 15 to 30 minutes, which some users find inconvenient.

Version 2.3.1 software includes new console commands that allow administrator-level users to exit the current locked Web UI session using telnet or ssh. Also added is a command to set the timeout to a user-defined value, which means users may now dictate the length of time it takes for the session to expire.

Use the 'web help' command to see a list of net commands. These include **web exit** and **web timeout minutes** (to set the connection timeout).

2.2.1 web exit

This command allows the user to exit the current web session from telnet or ssh connections.

2.2.2 web timeout

This command allows the user to set the web session timeout to any value between 1 and 60 minutes (inclusive). Spectracom recommends selecting a timeout interval of 10 to 15 minutes.

2.3 HTTPS Certificate 20-Year Life

The HTTPS Certificate Creation Web UI page has been changed to indicate required parameters (with a red asterisk). Refer to the Security tab on the System Setup page.

The default Spectracom HTTPS Web Server Certificate is now 20 years. The new default Certificate life is therefore 7300 days (20 years, in days) and appears on the page as:

* Self Signed Certificate Expiration (Days):

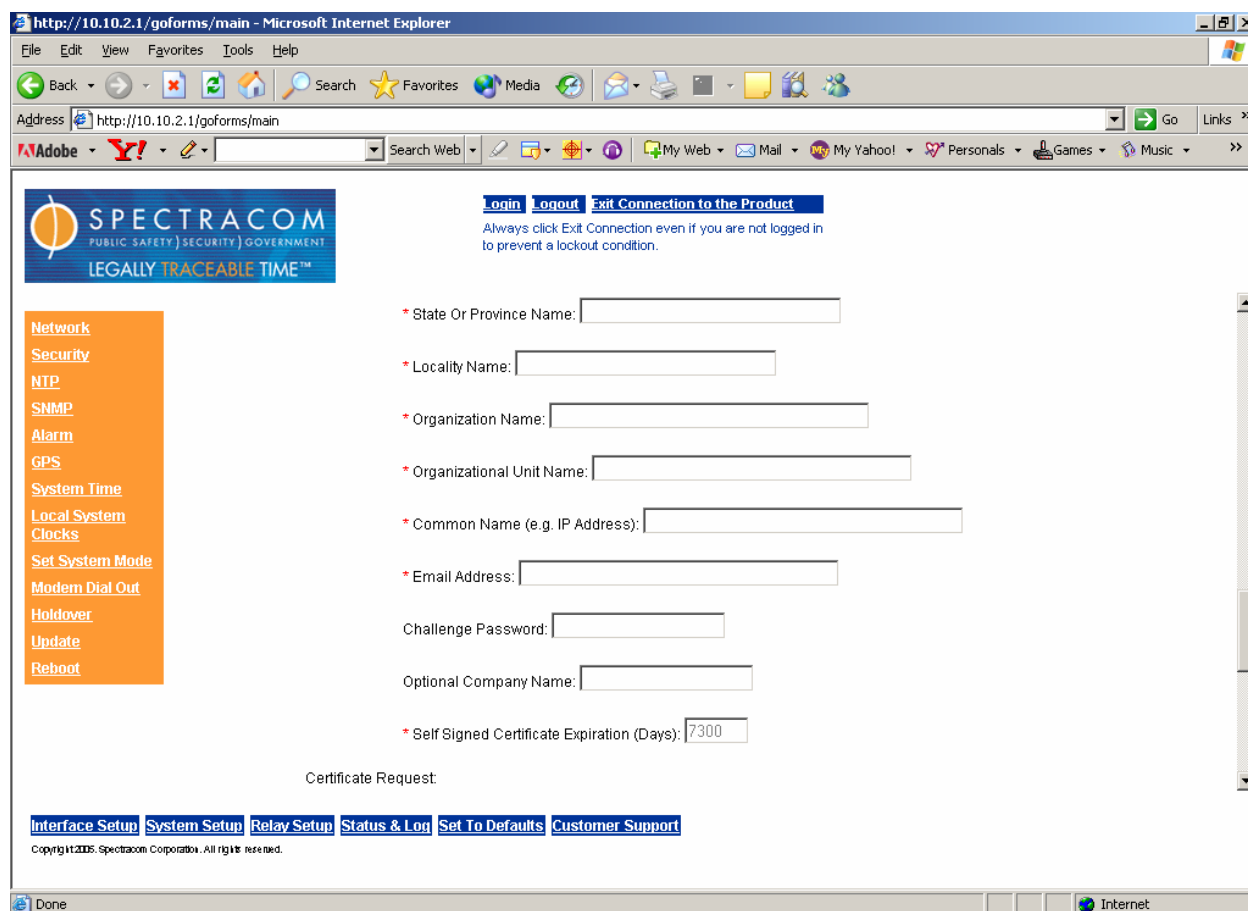


Figure 2-2: HTTPS Certificate Creation Web UI Page

2.4 Modem

Modem functionality has been improved in software version 2.3.1. ITU-R TF583.4 format is now supported. Support has also been added for the two most commonly used baud rates (1200 and 9600 baud) for ITU-R and ACTS formats. NetClocks running software version 2.3.0 require the user to reboot the unit when switching from Console to Modem mode. In software version 2.3.1, it is no longer necessary to reboot when switching from one mode to the other.

The user may select the Baud Rate or the Setup Port mode as shown in the following sections.

2.4.1 Baud Rate

The baud rates 1200 and 9600 are supported because they are the most commonly used baud rates for ITU-R and ACTS formats worldwide. ITU-R format typically uses 1200 baud, while ACTS format typically uses 9600 baud.

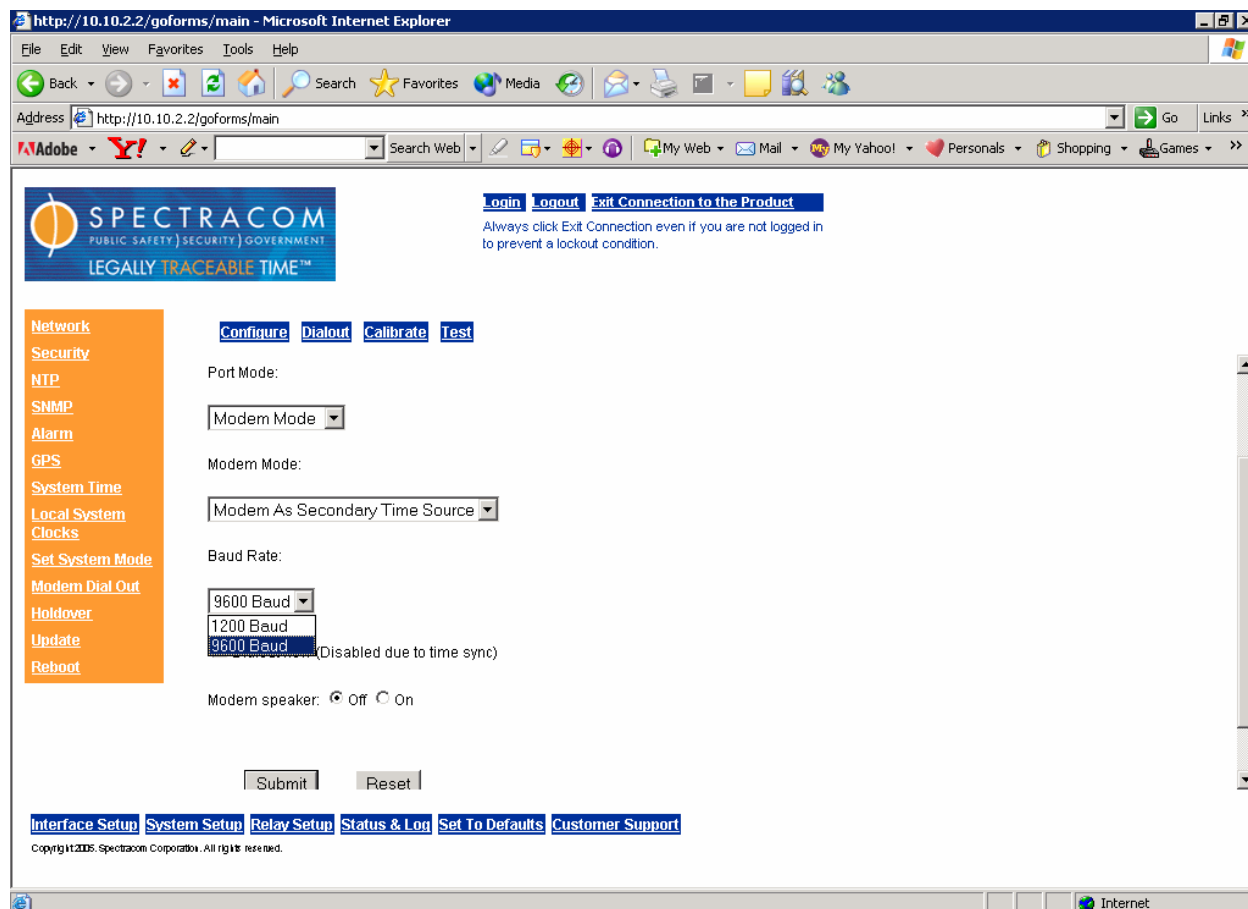


Figure 2-3: Baud Rate Support

2.4.2 Setup Serial Port Mode

To switch from Serial Console Port mode, select Modem mode (Figure 2-4). Once the Modem mode is selected, click Modem Dial Out (Figure 2-5). This displays all the modem tabs.

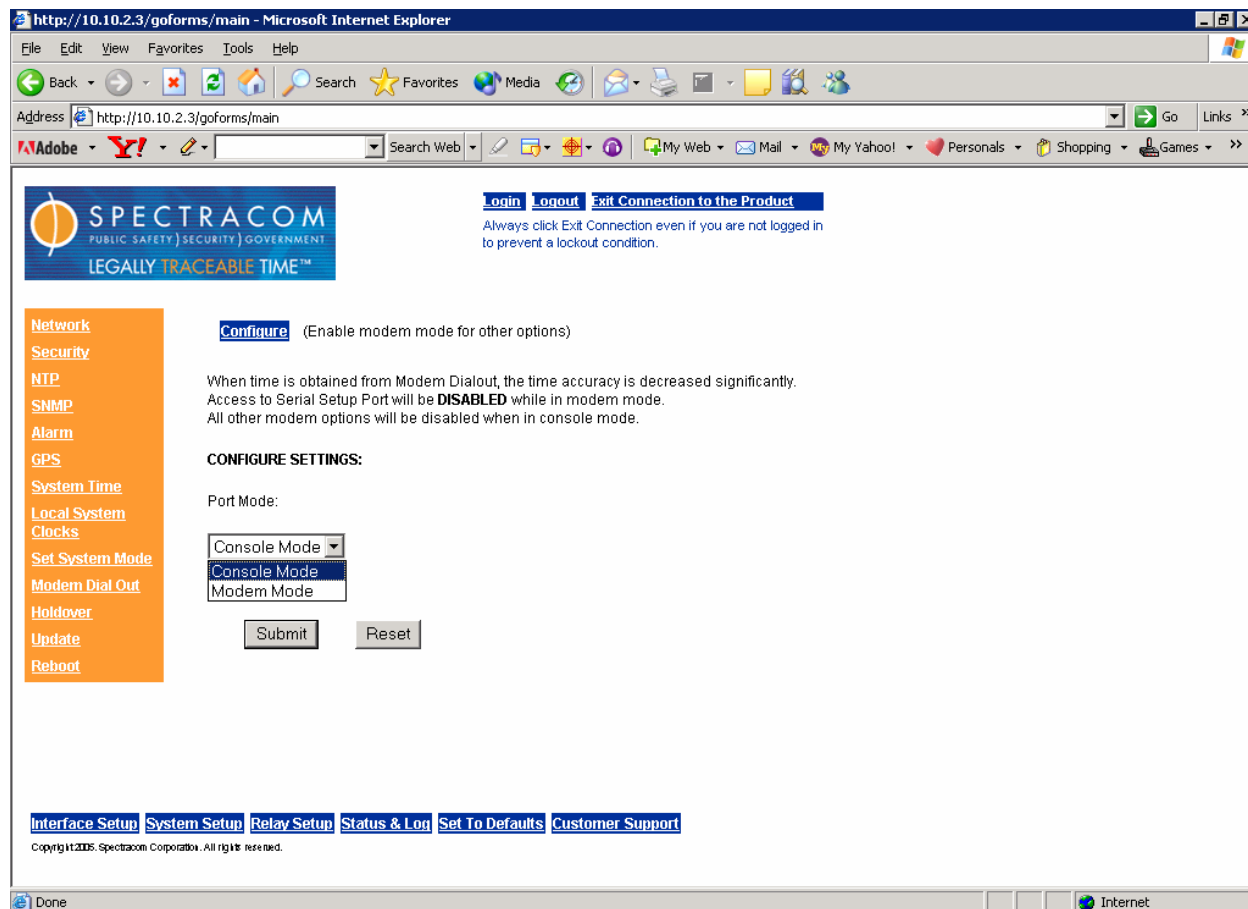


Figure 2-4: Switching from Console Mode to Modem Mode

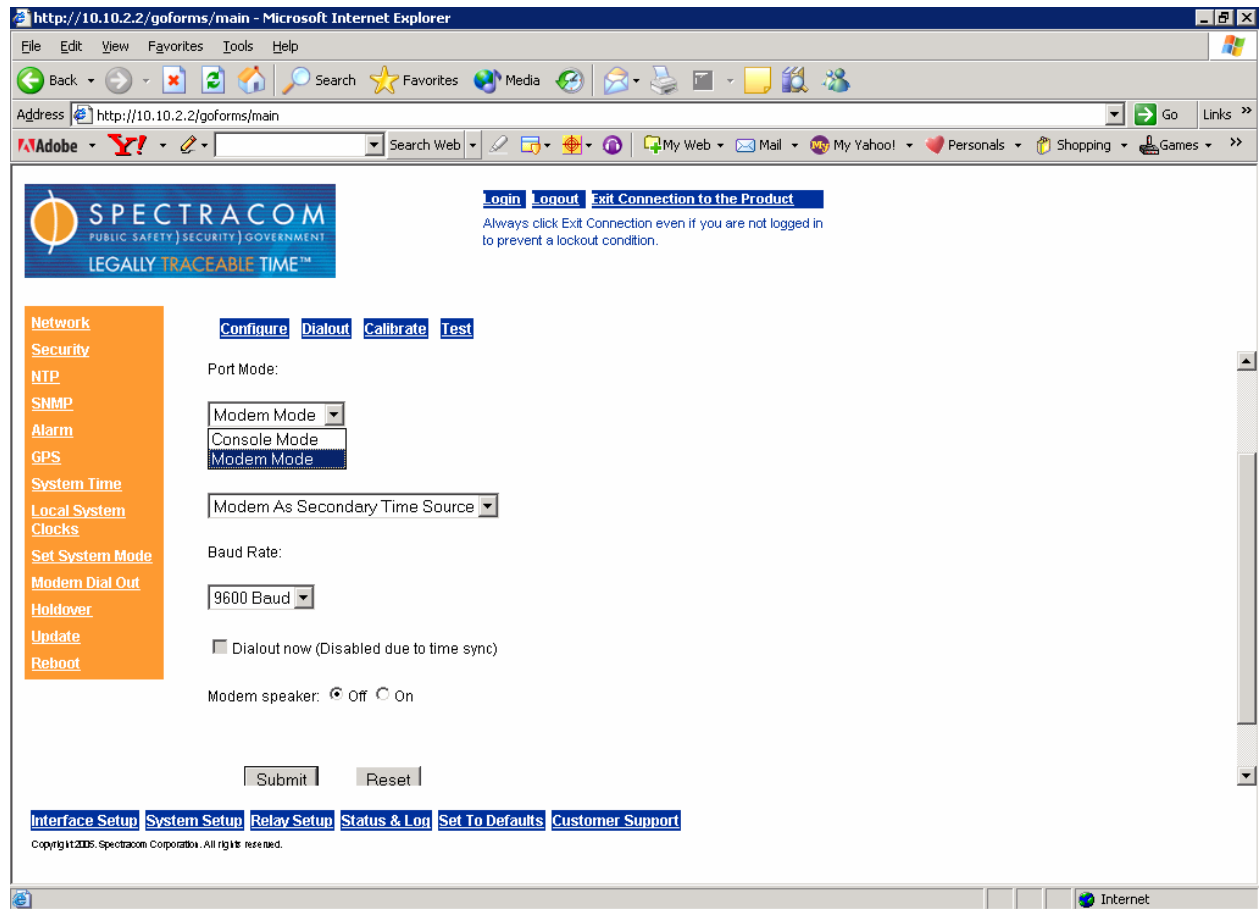


Figure 2-5: Modem Dial Out

2.4.3 Modem Command Line Commands

New modem line commands have been added to facilitate user operation and debugging of modem features. This supports customers in the field should there be issues concerning other dial-up time references.

The provided modem commands are:

mdo help	mdo help – Used to get detailed information for modem commands
mdo avg	mdo avg [on off] [# auto] – Set the averaging behavior of the modem
mdo log	mdo log [debug normal] – Set logging mode
mdo stat	mdo stat [reset] – View or reset the modem statistics
mdo delaycomp	mdo delaycomp [spring itur] [on off] – Enable/disable delay compensation
mdo mode	mdo mode [console modem] [1200 9600] – Set port mode and optionally change baud rate
mdo dialnow	mdo dialnow [test] – Dial out immediately
mdo baud	mdo baud [1200 9600] – Set baud rate
mdo speaker	mdo speaker [on off] – Set modem speaker enable

2.4.3.1 mdo avg

Usage: mdo avg [on|off] [#|auto]

This command switches the averaging algorithm on and off. If averaging is turned on (**mdo avg on**), the number of points to average must be specified. If the number of points is specified as auto, the unit will choose the appropriate number. If no parameter is specified, the current state will be printed.

NOTE: By default, averaging is NOT used. Averaging is recommended only after a few successful dial-outs have been performed.

2.4.3.2 mdo log

This command allows the user to turn on logging of call data and state to debug files for use in providing feedback to Spectracom when testing with unsupported ACTS or ITU-R time references. The call data files are named call#.log and are found in the logs directory.

NOTE: Do not leave this mode switched on, as the number of log files increases with each call. Switch it on as directed by Spectracom if you are testing a new dial-up time service.

Enter **mdo log debug** to switch the log on. Enter **mdo log normal** to switch the log off. When detailed logging is enabled, every message from the modem is printed to a file. Remember that this mode should be used only for debugging, as files will accumulate.

2.4.3.3 **mdo stat**

This command allows the user to view or reset modem statistics. Enter **mdo stat** to print the statistics to the console. Enter **mdo stat reset** to reset the statistics.

2.4.3.4 **mdo delaycomp**

This command skips the delay compensation step in ACTS and ITU-R protocols. This is required in the UK when using the free ITU-R NPL format (only the pay-for-use format supports delay compensation). Skipping the delay compensation may be useful in debugging or synchronizing to untested ACTS or ITU-R protocols. If the modem indicates a No Sync error when calling and connecting, try disabling delay compensation.

NOTE: Disabling delay compensation reduces the accuracy of the time synchronization.

Enter **mdo delaycomp spring on** or **mdo delaycomp itur on** to enable delay compensation. Enter **mdo delaycomp spring off** or **mdo delaycomp itur off** to disable delay compensation.

2.4.3.5 **mdo mode**

This command sets the console mode and, optionally, changes the baud rate. Enter **mdo mode console** or **mdo mode modem** to switch between console and modem modes. Enter **mdo mode modem 1200** or **mdo mode modem 9600** to set the baud rate.

2.4.3.6 **mdo dialnow**

This command dials out the modem. Enter **mdo dialnow** to dial out immediately.

2.4.3.7 **mdo baud**

This command sets the baud rate.

NOTE: ITU-R protocols typically use 1200 baud, while ACTS protocols typically use 9600 baud. NIST ACTS may support either, but 9600 baud is recommended.

2.4.3.8 **mdo speaker**

Entering this command switches the modem speaker on and off. Enter **mdo speaker on** to enable the speaker and **mdo speaker off** to disable it.

2.5 NTP

The NTP Daemon has been extended to allow the user to define the Reference Identifier string. A Reference Identifier is a 4-byte field in the NTP packets indicating, in either numerical or ASCII format, the time source used by the NetClock. This field contains the Time Identifier, such as GPS, STCI (Serial Time Code Input), or Modem Format (ITUR, PTB, SP [SPRING], NPL etc.).

The user can set the Reference Identifier to indicate the actual time source, such as WWVB for a 9188 NetClock using the Serial Time Code Interface (STCI) to connect to a NetClock/2 or some other WWVB receiver. The user may also use the 4-byte field as an abbreviation for the location of the NetClock, such as NYC, CHI, BOS, etc. Refer to Figure 2-6.

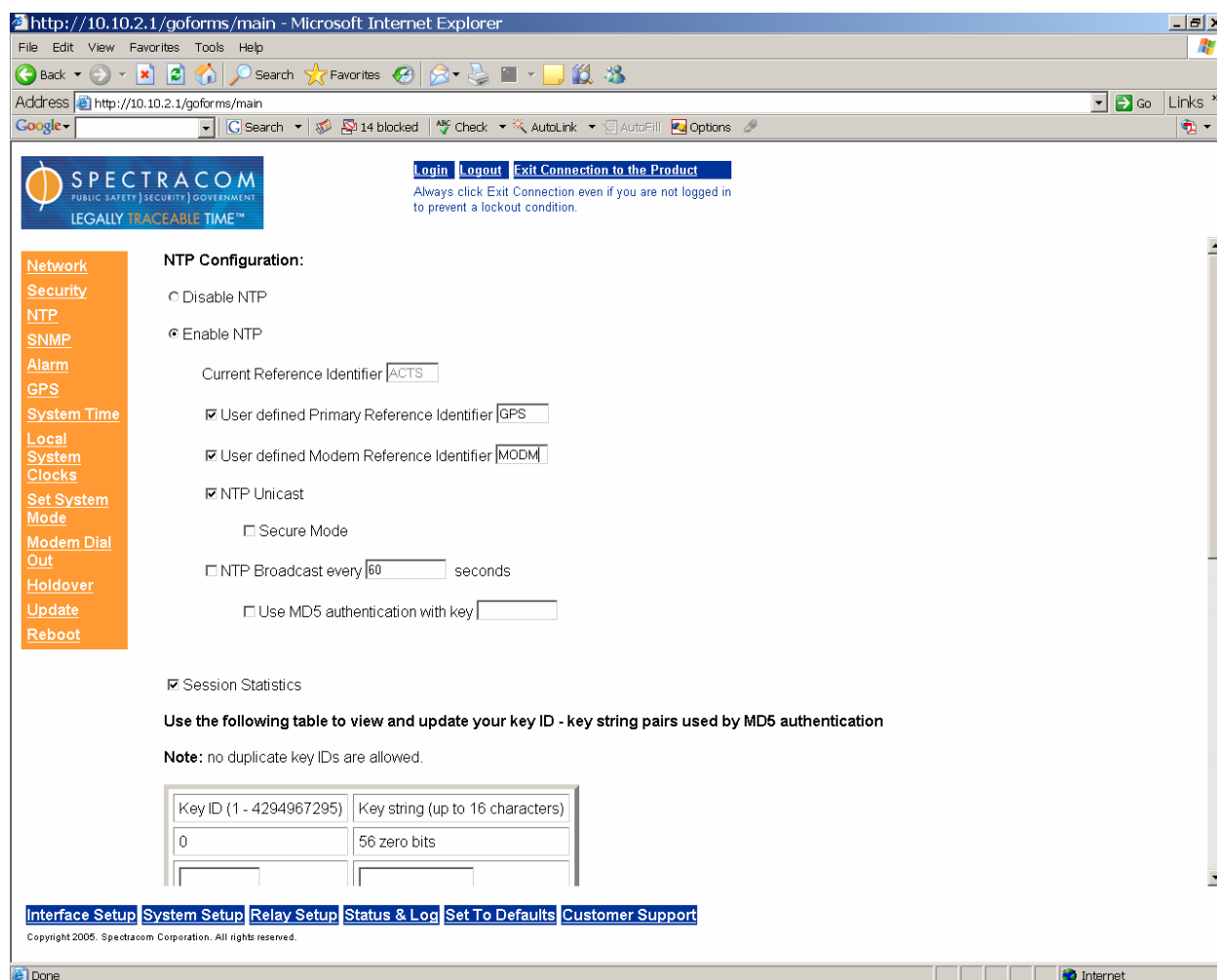


Figure 2-6: Reference Identifier Field

Spectracom provides a means to set a Reference Identifier for the primary time sources, such as GPS, Serial Time Code Input, or User Defined. A means to define the

Modem Reference Identifier separately is also provided for NetClocks that include a Modem as a backup time source (Figure 2-6).

2.5.1 NTP Command Line

The NTP Daemon also supports new commands for software version 2.3.1:

ntp refsrc ntp refsrc [primary|modem] [on|off] ['4-character-string] – Sets NTP reference source

ntp timeout ntp timeout [seconds] – Used to set timeout for remote access tool

2.5.1.1 ntp refsrc

This command allows the user to set the primary and modem user-defined reference identifiers. Input this as **ntp refsrc [primary|modem] [on|off] ['4-character-string]** with the appropriate entries.

2.5.1.2 ntp timeout

This command allows the user to set the time difference allowed between the remote Network Access Tool and the NetClock. This is a security feature avoiding replay attacks. Enter **ntp timeout [seconds]** to set the value.

2.6 System Time

The System Time Tab found on the System Setup web page allows the user to view the current time on the unit using UTC or a Local Clock defined by the user. This page also allows the user to set (manually) the system time. The page has been modified for version 2.3.1 software to include two additional check boxes. The “Allow user to set time using SNMP or Web UI” checkbox allows user inputs from SNMP or this Web UI to set the system time manually. If the checkbox is NOT checked, users may not manually input time. Refer to Figure 2-7.

NOTE: When a user sets the time manually, the serial time code messages from the unit and the NTP packets will indicate that the NetClock is NOT synchronized. Setting the time manually means the unit is NOT traceable to UTC. When entering time manually, you **MUST** use UTC time. If you enter local time (or a time from any other time zone), the time will be misinterpreted as UTC.

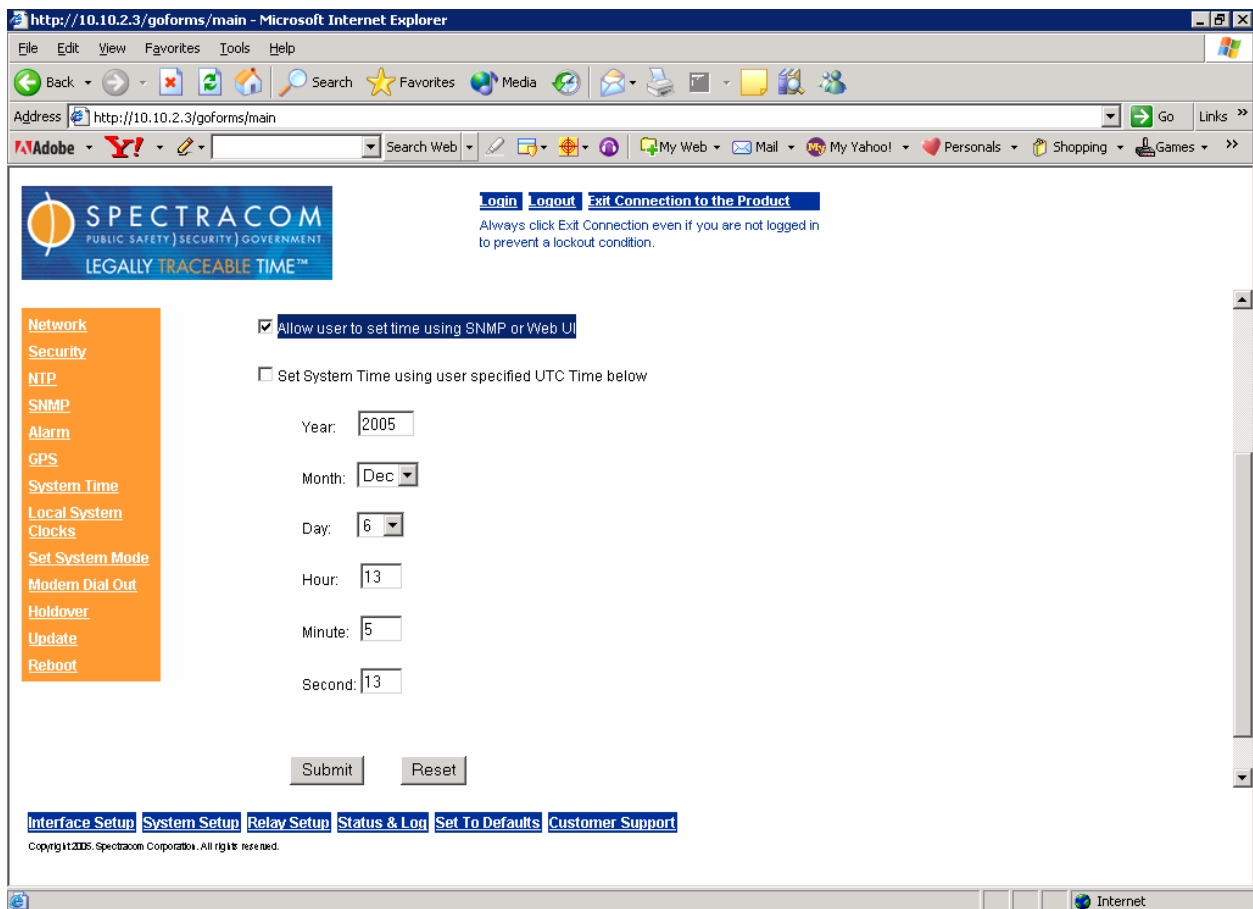


Figure 2-7: Setting System Time Options

2.7 Further Assistance

If you require additional assistance integrating this addendum with your operations and maintenance manual(s), please contact Spectracom Customer Service at 585.321.5800. Spectracom may also be reached through our website at www.spectracomcorp.com.

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