



ClockSync DAYTIME (RFC867) v9 Module Application Guide






Description

This utility allows a Crestron 2-series processor to synchronize its internal clock with a public NIST Internet time server using an implementation of the DAYTIME protocol. This is similar in theory and operation to the wide variety of Atomic Clock programs available for Windows and other operating systems.

Internet Disclaimer

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Compatibility			Processor Requirements	
 2-Series Compatible	 NOT CNMSX Compatible	 NOT System Builder Compatible	 Ethernet REQUIRED	 Compact Flash NOT NEEDED

Module Application

NOTE: There are numerous possible implementations of the DAYTIME protocol. This module supports *only* the response format used by NIST time servers. This module may not function as expected using servers other than those specified below.

This utility replaces the extended clock driver. Do not place any other clock driver in the program. This utility will set the processor's date and time. The time will be adjusted every morning at 2am. You may also manually force a poll by pulsing the "[time_server_connect](#)" input.

The Crestron processor should be running cuz 3.117 or higher.

DNS servers must be declared on the Crestron processor. Use the Viewport command ADDDns or the menu under Functions -> Set Up Control System IP Information -> Advanced. For best results, use the DNS servers provided by the ISP of the connection you are trying to monitor. If these are unavailable, you can use 216.175.203.18 and 216.175.203.27, which were used in the test and debug process of this module.

SETUP INSTRUCTIONS:

Create a TCP/IP Client connections to time-a.nist.gov and utcnist.colorado.edu. Both connections should be on TCP port 13. Make connections as listed below and enjoy.

Signal and Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

DIGITAL INPUTS

[poll_time] pulse to force poll. Optional, since polling is automated for 2am.

ANALOG INPUTS

time_server1_connection_status tie to status output of TCP/IP client1

time_server2_connection_status tie to status output of TCP/IP client2

SERIAL INPUTS

time_server1_rx\$ tie to rx\$ of the TCP/IP client for the primary clock

time_server2_rx\$ tie to rx\$ of the TCP/IP client for the secondary clock.

DIGITAL OUTPUTS

[time_set_success] Optional. Pulsed when the time is successfully set from either time server

[time_set_failure] Optional. Pulsed when the time could not be successfully set using either time server.

time_server1_connect Connect to the enable input of the primary UDP socket

[time_server2_connect] Optional. Connect to the enable input of the secondary UDP socket

[in_dst] optional, high when in DST

ANALOG OUTPUTS

This module does not utilize any analog outputs.

SERIAL OUTPUTS

[time_module_status] optional debugging output with connection status messages

time_server1_tx\$ Tie to tx\$ of the primary UDP socket

[time_server2_tx\$] Optional. Tie to tx\$ of the secondary UDP socket

[tod\$] output of extended clock driver

PARAMETERS

DST same as clock2, as follows:

..... 0d No DST

..... 1d U.S.

..... 2d Southern Hemisphere

..... 3d Same as 2d

..... 4d European Union

..... 5d Egypt

uct offset signed value indicating number of time zones off from GMT (i.e. Eastern US is -5d, Central US is -6d)

dwell unsigned value indicating the amount of time that the module should wait before rolling over to the next time server or declaring failure. If this time expires while trying server #1, server #2 will be tried. If the time expires while trying server #2, the [time_set_failure] output will be pulsed

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at <http://www.thecontrolworks.com/customerlogin.aspx>.

Distribution Package Contents

The distribution package for this module should include:

ClockSync DayTime (RFC867) v9 help.pdf	This help file
ControlWorks Clocksync DayTime (RFC867) v9.UMC	Crestron user module to insert in program
ControlWorks ClockSync RFC867 DayTime Processor v9.usp	SIMPL+ used with ClockSync DayTime Module
ControlWorks ClockSync RFC867 DayTime Processor v9.ush	SIMPL+ used with ClockSync DayTime Module
ControlWorks ClockSync DayTime (RFC867) v9 demo.smw	Example program (PRO2)

Revision History

V9 lincoln@controlworks.com 2006.04.05

No changes since V7 for this module. Changes made in RFC868 and RFC2030 modules

lincoln@controlworks.com 2006.01.31

Implemented revised Test DNS logic

V8 lincoln@controlworks.com 2005.11.02

No changes since V7 for this module. Changes made in RFC868 and RFC2030 modules

V7 lincoln@controlworks.com 2005.10.03

Reformatted for commonality with other TimeSync clients

Added date parsing/setting

Added DNS lookup testing

Changed automated time check to 2am for commonality with other clients

V6 bob@controlworks.com

Fixed DST issue

V5 tom@controlworks.com

Fixed hour offset issue

V4 tom@controlworks.com

Resolved logic wave bug introduced in V3

V3 tom@controlworks.com

Added automated 6am time check

Internalized clock2 functions

Internalized time zone initialization

Remove SIMPL+ and convert to SIMPL only

Changes in NIST response format

V2 tom@controlworks.com

Internal release only

V1 tom@controlworks.com and bob@thecontrolworks.com

First release

ControlWorks Consulting, LLC Module License Agreement

Definitions:

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