Timetek Systems

MasterTimeSyncô



User Guide

Version. 2.0

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MasterTimeSync[™]

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Introduction

MasterTimeSync[™] is a program that will update ALPHA LED Serial Clocks & ALPHA Big Dot Signs every minute, every hour, or once a day, based on the internal clock of the PC upon which this Application is running.

MasterTimeSyncTM offers two alternative ways of sending this information to the Clocks, the first being via a *Serial Connection from one of the computers Com Ports the other being via a **LAN Connection using TCP\IP.

MasterTimeSync[™] can be synchronised with either an Internet based timeserver, ***GPS Module or a local timeserver on your existing network, therefore keeping all clocks to the one time.

MasterTimeSync[™] has an incorporated system test feature and optional ****Bell Signal Control that with a user defined schedule can be used for Start/Finish times. The signal can also be controlled manually from the PC for special events.

* For Serial you will require a RS232 to RS485 Converter Box.

** For TCP\IP you will require an Ethernet Adapter.

*** GPS Module available from your supplier.

**** For Bell Control you will require the Bell Module.

System Requirements

- ✓ Pentium or higher processor
- ✓ Windows 98, ME, 2000 or XP
- ✓ 15MB of free hard disk space
- ✓ 32MB RAM
- ✓ Spare COM Port or Network Ability
- ✓ Internet Connection (for time settings)



Installation

- 1. Insert the installation CD into the CD-ROM drive of the computer.
- 2. The CD should auto-run, if not press the **Start** button, and then press **Run**.
- 3. Type **<drive>:setup**. For example, if the CD-ROM drive is drive E, type **e:setup** then press **Enter**.
- 4. Select Install MasterTimeSync and enter the serial number.
- 5. Read the **License Agreement** carefully and if you agree check the **I agree with the above terms and conditions** box at the bottom of the screen, then press **Next**.



License Agreement



6. The next screen shows the destination folder the program will be installed to. This is a default location and cannot be changed.

📟 Installing Ma	ster TimeSync	
	Destination Directory C:\Program Files\MasterTimeSync	
	Required: 995 K	Browse

7. Make note of where the folder is and then press **Start**.

Installing MasterTimeSync	
Installation was completed successfully	
100%	
[]	

8. Upon completion of the installation, by default it will ask if you want to run the Application if you don't wish to do this un-check the **Run Installed Application** box and press **OK**.

📟 Installing M	aster TimeSync	
TIMETEK SYSTEMS	Installation Complete ✓ View Readme File ✓ Run Installed Application ✓ Create Shortcut(s) on Desktop	
	ŪK]	



General Settings

When you run the program for the first time the Settings screen will appear, it has five sections, Communication Settings, Interval Settings, Startup, System Test and Bell Settings. This is where you set-up things like how MasterTimeSyncTM will communicate with the clocks and how often, preform system tests and enable Bell Control (optional).

MasterTimeSync - General	Settings		×
Info			
Communication Settings		ms Port	Interval Settings
		ins r or	Minute
			Hourly
Network Address	Port		🗖 Daily
	10001	Add IP	Minute Updates
		Delete IP	
		Check IP	Startup
			Start Minimized
Bell Settings			System Test
🔲 Enable Bells Select Dev	ice Bells ON	Bells OFF	Start
			System Test Satus
			Stopped
	Close & Save	Cancel	

General Settings Screen

Communication Settings:

This is the section where you set-up either a Serial Connection or a TCP/IP Connection. For Serial Connection you will require a Converter Box and for TCP/IP you will require an Ethernet Adapter. (Contact you supplier for details).

Serial Connection:

- To connect to the Alpha clock using a Serial Connection check the **Serial Comms** connection box.
- Select the Com Port that the Converter Box is attached to by using the scroll bar.
- The Baud Rate and Parameters are set by default to 9600, 8, none and 1, this cannot be changed.
- The next step is to move on to Interval Settings. (page 9)

MasterTimeSync - Gener	al Settings	
Info		
Communication Settings		Interval
🔽 Serial Comms	Com1 Comms Port	🔽 Mir
	Com1 A	П Но
Network Address	Com3 Com4	🗖 Dai
	10001 Add IP	Min
	Delete IP	
		_ Startup

TCP\IP Connection:

- To connect to the Alpha clock using a TCP\IP Connection check the **TCP\IP** connection box.
- Then press the **Add IP** button this will bring up a screen prompting you to enter a valid TCP/IP Address, enter a Network Address (IP Address) and press **Add**.



• For more than one IP Address repeat the above step.

MasterTimeSync[™]

- The IP Addresses can be viewed by selecting the drop down arrow on the Network Address Box.
- You can delete any of the IP Addresses by highlighting them and pressing **Delete IP**.

MasterTimeSync - General Set	tings
Info	
Communication Settings	1 Comms Port
Network Address 192.168.0.1	Port 10001 Add IP Delete IP Check IP

Testing IP Address:

- To test communication simply highlight an IP Address and press **Check IP** this will bring up the Ping Command.
- If successful it should read Reply from (your IP Address).
- If it reads Request Timed Out check your IP Address, if the IP address is OK check all connections and cabling.
- The next step is to move on to Interval Selection. (page 9)

C:\WINDOWS\system32\Pir	ng.exe
Pinging 10.64.254.2 wit}	h 32 bytes of data:
Reply from 10.64.254.2:	bytes=32 time<1ms TTL=128 bytes=32 time<1ms TTL=128 bytes=32 time<1ms TTL=128



Interval Selection:

- MasterTimeSyncTM offers you three options on how to send the updates to the clock.
- Minute, this will send an update every minute.
- Hourly, this will send a signal every hour on the hour.
- **Daily**, this will send one update a day at 6am.

* Default is Minute.

MasterTimeSync - General S	ettings	X
(nfo		
Communication Settings	Economic Part	Interval Settings
192.169.0.1	10001 Add IP Delete IP	F Daip 6am Update

Startup:

• By selecting **Start Minimized** MasterTimeSync[™] will, after restarting the PC, run in the background with an icon in the system tray. By not selecting this, the Run Screen will appear after a restart.

Check IP	Statup
Bels OFF	System Test Start System Test Satus
	Stopped



System Test:

The System Test feature is for testing communication to the clocks. It sends a signal to the clocks every 30sec, forcing the time to 6am and holds them there until the test is stoped. It is recommended that you conduct this test on a new installation. Any clocks that don't stay at 6am possibly have a cable or connection fault.

- Press **Start**, the System Test Status window will display Starting.
- When the window displays Display Time 06:00 the clocks should all be at 6am.
- Press **Stop** to end the test, the clocks will reset to time on the next minute.
 - * Closing the screen will also end the test.



Bell Settings:

For information on setting up signal control refer to Bells on page 15.



Display Settings

This is where you select the displays that you will be running on the system. Currently MasterTimeSyncTM supports Alpha Serial Clocks and the Alpha Big Dot Range of Signs.

Select Displays:

- If you are only running Alpha Serial Clocks you do not have to change anything, as they are selected by default.
- Press Close & Save.
- To run Big Dot displays select Alpha Big Dot.
- This will enable the Big Dot Settings.

MasterTimeSync -	Displays	
Info		
Select Displays		
🔽 Alpha Seria	l Clock	🥅 Alpha Big Dot
Big Dot Settings-		
Format	Font	Display D.O.W
🔽 12hr	🔽 Regular	🗖 Yes
🗖 24hr	🗖 Bold	
Г		1
l	Close & Save	Cancel

Display Settings Screen

• Then go to Big Dot Settings over the page.



Big Dot Settings:

- Select the **Format** 12hr or 24hr, this will display 6:00pm or 18:00 respectively (default 12hr).
- Select the **Font** Regular or Bold. Bold will give you a greater viewing distance (default Regular).
- Select **Yes** if you wish to display the Day Of Week on the sign (eg. Tue 6:00pm, Tue 18:00 ...ect)

MasterTimeSync -	Displays		
Info			
-Select Displays			
🗐 Alphe Serie	Clock	🖾 Abba Bia Das	
Big Dat Settings Format	Fort	Display D.O.W	
🔽 12hr	🔽 Regular	□ Yes	
🖂 24hr	E Bold		
[Close & Save	Cancel	

• Press Close & Save.



Time Settings

MasterTimeSyncTM gets its time from the computers internal clock, if the PC clock is not on time the system clocks will reflect that. By using the Time Settings in MasterTimeSyncTM the computers internal clock can be synchronized to a timeserver, either via an internet based timeserver such as the one at the National Institute of Standards and Technology (time.nist.gov), a time sever on the local network or a *GPS Unit that uses satellites to retrieve the time.

* Contact your supplier for details.

MasterTimeSy	ic - Time Settings	×
Info		
Update Setting		1
Time Server Se		
Time Server	Update Now	
Time Status	Updates Not Enabled	
	Close & Save Cancel	5

Time Settings Screen

Update Settings:

- Select Enable Updates.
- Then choose Weekly or Daily updates (default is Weekly).



Time Server Settings:

- Enter a URL or IP Address of a timeserver into the Time Server window (eg. Time.nist.gov).
- Then press **Update Now** this will update the system time and display the results in the Time Status window.
- The Time Status window will also display the next update time according to your selection in Update Settings.

MasterTimeS	ync - Time Settings	
Info		
Update Settin		🗖 Daily
Time Server		
Time Server	time.nist.gov	[Update Now]
Time Status	Last Update Tue,12 20:0 Next Update Tue,19 20:0	
L	Close & Save Cancel	

• Press Close & Save.



Bells

MasterTimeSync[™] has the ability to control a signalling device to indicate work start stop times (eg. bell or siren). This is an optional extra and requires Bell Module available from your supplier.

* You will not be able to enable the bells without the Bell Module.

Bell Setup:

• From the run screen under Settings, select General Settings.



• Select Enable Bells, then press Select Device.

Enable Balls Se	ect DeviceBels	DN	BelsOFF	1	System Test Satur
No Advantech Drive	Installed, Please sele	ct device		1	Stopped

MasterTimeSync[™]

- The following screen will appear.
- Highlight the PCI-1761 device and press Select.



ADSDAQ Device Screen

• The device will now be displayed in the Bell Settings window.

ell Settings		
Enable Bells Select Device	Bells ON	Bells OFF
000 : {PCI-1761 BoardID = 0 I/0	= d400H }	
	Close & Save	Cancel

• You can test the relay by selecting **Bells On** then **Bells Off**.



Bell Schedule:

The bell Schedule is where you input your signal events. They are entered by selecting the days of the week it is to occur, the time and the duration or length of the signal. You can also enter an event description if you like this can help identify the events in the schedule list.

• From the run screen under **Bells** select **Schedule**.



• This will open the Schedule Screen.

chedule List	Schedule Properties
Time SMTWTFS Dutation Event	Sunday Nonday Tuesday Wednesday Thursday Friday Saturday Time HH MM D0 00 00 00 00 Update
Delete	

Schedule Screen



Adding Events:

- Select the box corresponding the day or days you require.
- Enter the time in 24hr format HH:MM:SS (HH = Hours, MM = Minutes, SS = Seconds).
- Enter the Duration in Seconds (max 30).
- Enter a description for the event, and then press Add.
- Repeat the above steps until all events are entered in the Schedule List.

theckele Lis Time 21:00:00	Duration (3	Event Teo Break	Schedule Properties Sunday Manday V Manday V Tuesday V Huasday Fislap Saturday Time HH MM SS Duration 21 00 00 3 Event Fes Break Vodate
	Delete	1	Save/Close Cancel

• Press Save/Close.

ayouy i	2	
Mar	nual	Next Update
On	Off	Manua
	Mar	Manual

• The Next Bell Event will be displayed on the Run Screen.



Deleting Events:

- Highlight the event in the Schedule List.
- Press **Delete**.
- Press Save/Close.

Editing Events:

- Highlight the event in the Schedule List.
- Its properties will be displayed in the Schedule Properties.
- Make any changes required then press **Update**.
- The event will now reflect the changes in the Schedule List.

chedule Lis	I			Schedule Properties
Time 21:00:00	NOCCON	Dutation 03	E vant Teo Breok	Sunday ✓ Nonday ✓ Nonday ✓ Tuesday ✓ Wednesday ✓ Wednesday ✓ Thusday ✓ Friday ✓ Salurday ✓ Inse HH MM SS Duration 21 00 00 3 Event Tea Break
		Delete	1	Save/Close Cancel

• Press Save/Close.



Manual Control:

At any time from the Run Screen you can operate the signal manually using the On and Off buttons. This can be used for alerting employees for meetings ect.

- To operate press the **On** button in the Next Bell Event section (this will latch the relay on).
- To cancel press the **Off** button.

MasterTimeSync	
<u>File S</u> ettings <u>B</u> ells <u>I</u> nfo	
Current Time & Date	System Time
20:05:24 Tuesday July 12	20:05
Next Bell Event Manual Events Finished On Off	Next Update Time
	(Manual Update)



Running the Program

Once you have entered all your settings click **Save and Close** to run the program, all your settings will be saved to a file located in the installation directory.

Run Screen:

The Run Screen appears when the program is running, unless you selected Run Minimized in the General Settings, if so this screen will not appear until you double click on the MasterTimeSyncTM in the system tray.

MasterTimeSync	
<u>File S</u> ettings <u>B</u> ells <u>I</u> nfo	
Current Time & Date	System Time
20:01:03 Tuesday July 12	20:0 /
Next Bell Event Manual	Next Update Time
Not Enabled On Off	(Manual Update)

The Run Screen has four sections

- Current Time & Date.
- System Time.
- Next Update Time.
- Next Bell Event.



Current Time & Date Display:

This window displays the current date & time of the computers internal clock.

System Time:

This window displays the time the system should be reading, it is advisory only, because the clocks can't send a signal back to confirm the time they are displaying. The updates MasterTimeSyncTM sends, and the current computer internal clock work out the time displayed here.

Next Update Time:

This window displays the time that the next update signal will be sent out to the system. The Manual Update button will send a signal out on the next minute.

Next Bell Event:

If you have installed the bell option this window will display the next bell event due according to the Bell Schedule. When the last event for the day has passed, it will display Events Finished, after midnight it will display the next event due on that day.

At any time from the Run Screen you can operate the signal manually using the On and Off buttons. This can be used for alerting employees for meetings ect.



Release Notes

Added Features:

- 1. Time Server Feature.
- 2. System Test Feature.
- 3. Alpha Big Dot format (to communicate with Big Dot Signs).
- 4. Bell Schedule Option (to control signal devices).
- 5. Now runs in the System Tray.

Fixes:

- 1. Fixed disconnection problem with UDS after Power Failure.
- 2. TCP/IP port setting now adjustable.
- 3. Fixed problem with program running multiple times.

4. Removed Baud Rate & COM Parameter settings (as they were pre-set and could not be altered).

Acknowledgements

Version 1 code by Mark Thornhill.

Version 2 code by Matt Woodroffe.

Developed by Phil Westley.



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