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Multi Clock Synchroniser

Fusion clocks on TCP/IP network
Synchronising software

Operating Manual

Caution: There is a risk of electrical shock if this instrument is not properly installed



Caution: Risk of danger: Read the whole manual before you install this meter



Revision 0 21 October 2019

Warranty

We warrant our products against defects in materials or workmanship for a period of three (3) years from the date of purchase.

In the event of a defect during the warranty period, the unit should be returned, freight (and all duties and taxes) prepaid by the Buyer to the authorised distributor from where the unit was purchased.

The Distributor, at its option, will repair or replace the defective unit. The unit will be returned to the Buyer with freight charges prepaid by the distributor.

LIMITATION OF WARRANTY

The foregoing warranty shall not apply to defects resulting from:

1. Improper or inadequate maintenance by the buyer.
2. Unauthorised modification or misuse.
3. Operation outside the environmental specification of the product.
4. Mishandling or abuse.

The warranty set forth above is exclusive and no other warranty, whether written or oral is expressed or implied. We specifically disclaim the implied warranties of merchantability and fitness for a particular purpose.

EXCLUSIVE REMEDIES

The remedies provided herein are the buyer's sole and exclusive remedies.

In no event shall we be liable for direct, indirect, incidental or consequential damages (including loss of profits) whether based on contract, tort or any other legal theory.

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Warnings

Please carefully read this manual and all warnings. Install the display ONLY when you are sure that you've covered all aspects.



Where the product is intended for "UL" installations, removal or addition of option boards is not permitted.



Check that the model number and supply voltage suit your application before you install the display.



Connect the display according to current IEE regulations, IEC61010 & NFPA:70 National Electric Code in USA.



Power supplies to this equipment must have anti-surge (T) fuses rated at 1A for 230V supply, 2A for 110V



Don't touch any circuitry after you have connected the display, because there may be lethal voltages on the circuit board.



Do not apply power to the display if its case is open.



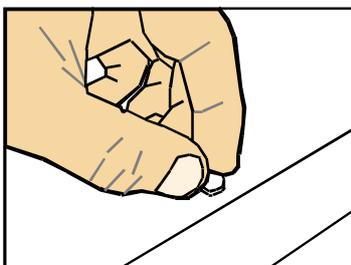
Only adjust on-board switches or connections with the power turned off



Make sure all screw terminals are tight before you switch the meter on.



Only clean the display's case and window with a soft damp cloth. Only lightly dampen with water. Do not use any other solvents.



Rear case screws - please note

The rear panel is held in place with finger-screws, which only need to be gently tightened.

Do not use tools to tighten or loosen the screws, as this could cause damage to the internal threads.

**Safety FirstDon't assume anything..... Always double check.
If in doubt, ask someone who is QUALIFIED to assist you in the subject.**

Introduction

Please contact us if you need help, if you have a complaint, or if you have suggestions to help us improve our products or services.

If you contact us about a product you already have, please tell us the full model number and serial number, so that we can give you accurate and fast help.

This product has a 3 year warranty. We will put right or replace any display which is faulty because of bad workmanship or materials. This warranty does not cover damage caused by misuse or accident.

If you return a unit for repair, please include a detailed description of the problem, and the name of a contact who we can refer to for any questions. Please mark for the attention of the QA Department.

IMPORTANT

If this equipment is important to your process, you may want to buy a spare to cover possible failure or accidental damage in the future.

This is because during factory shutdown periods, you may have to wait several weeks for an equivalent replacement, or we may have no stock at the time you urgently need it.

You may also need to pay extra carriage charges if you want a fast, guaranteed courier service. Warranty repairs or replacements are usually returned with a standard courier service.

We do not offer compensation for losses caused by failure of this instrument.

If you do not agree with these conditions, please return this item in unused condition, in its original packaging and we will refund the purchase price, excluding any carriage paid.

We thought you'd prefer to know about possible delays and extra charges now, rather than during a panic. A spare unit could help to avoid these issues.

We always try to improve our products and services, so these may change over time. You should keep this manual safely, because future manuals, for new designs, may not describe this product accurately.

We believe these instructions are accurate, and that we have competently designed and manufactured the product, but please let us know if you find any errors.

General Description

This software is to be installed on a Windows PC which is located on the same network as the clocks.

The PC's real time clock will be used to send synchronising data to the clocks, so the PC itself should be synchronised to a time server.

This software is suitable for use with PCs using Windows 7, 8, 8.1 and 10.

Windows .NET Framework 4.5.2 must be installed on the PC, in order for the time synchronising software to operate correctly.

Safety

Obey all safety warnings in this manual, and install displays according to local wiring and installation regulations. Failure to follow these guidelines may cause damage to the display, connected equipment, or may be harmful to personnel.

Any moving mechanical device controlled by this equipment must have suitable access guards to prevent injury to personnel if the display should fail.

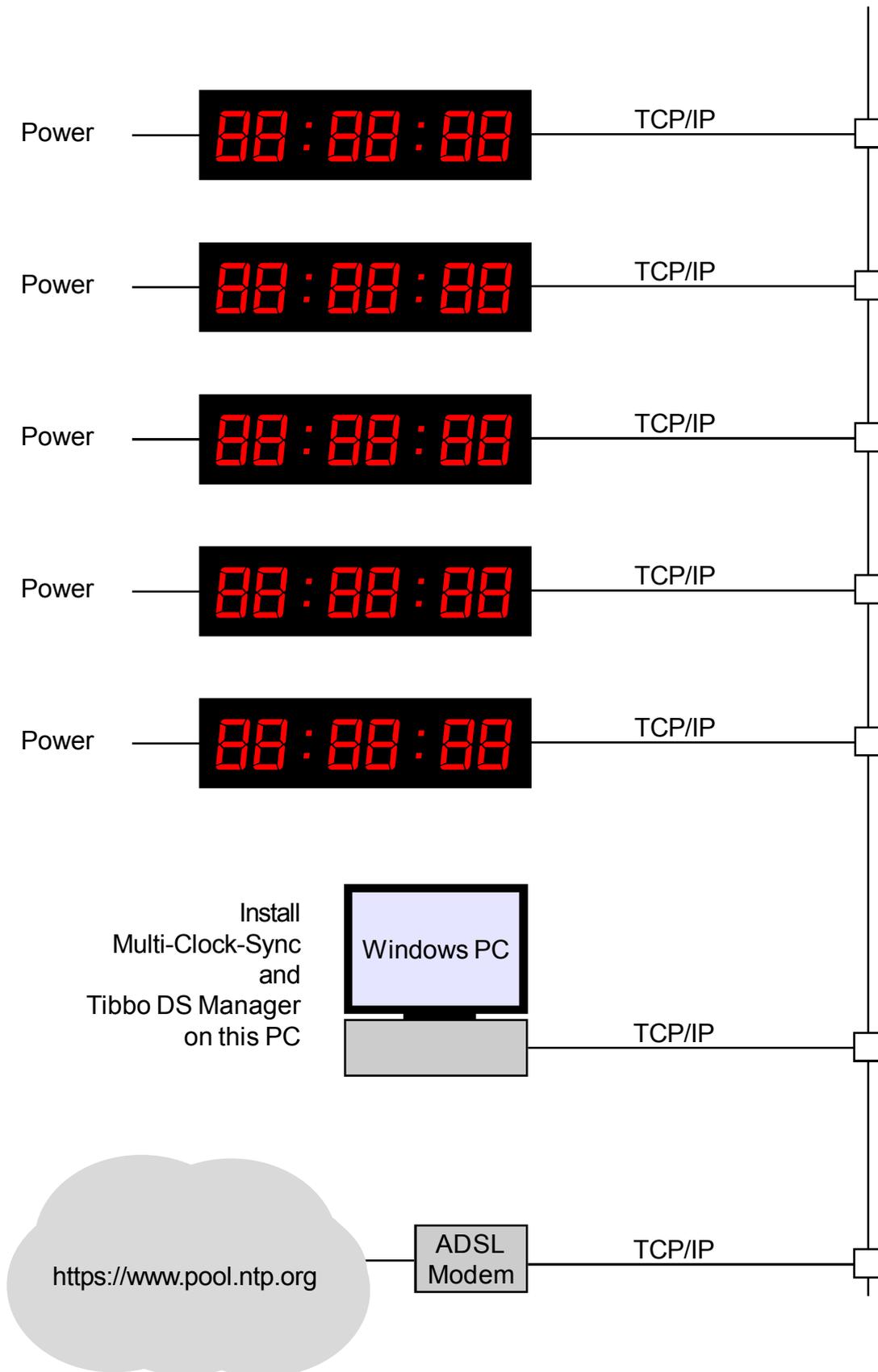


Caution: There is a risk of electrical shock if displays are not properly installed



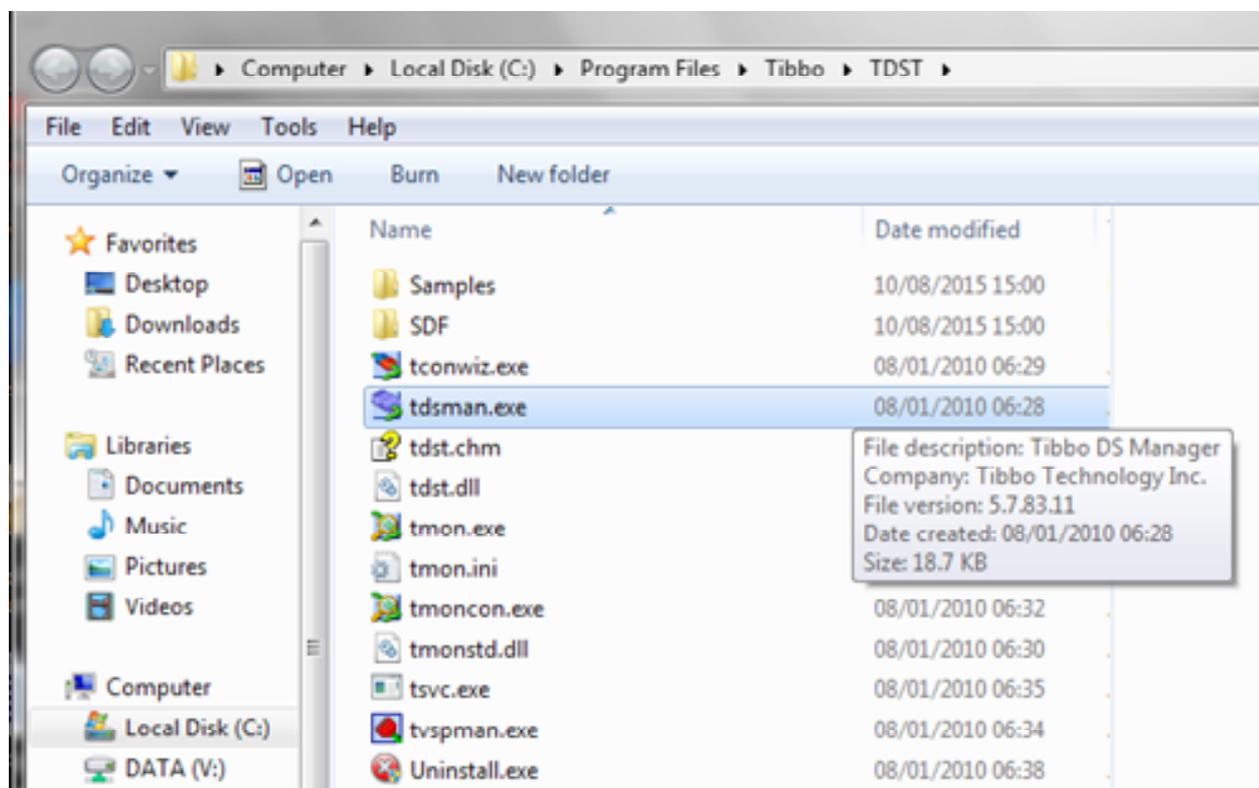
Caution: Risk of danger: Read the whole manual before you install display equipment

A typical Connection



Configure the display IP Addresses

Find DS Manager on the supplied disc. In a folder named Tibbo > TDST

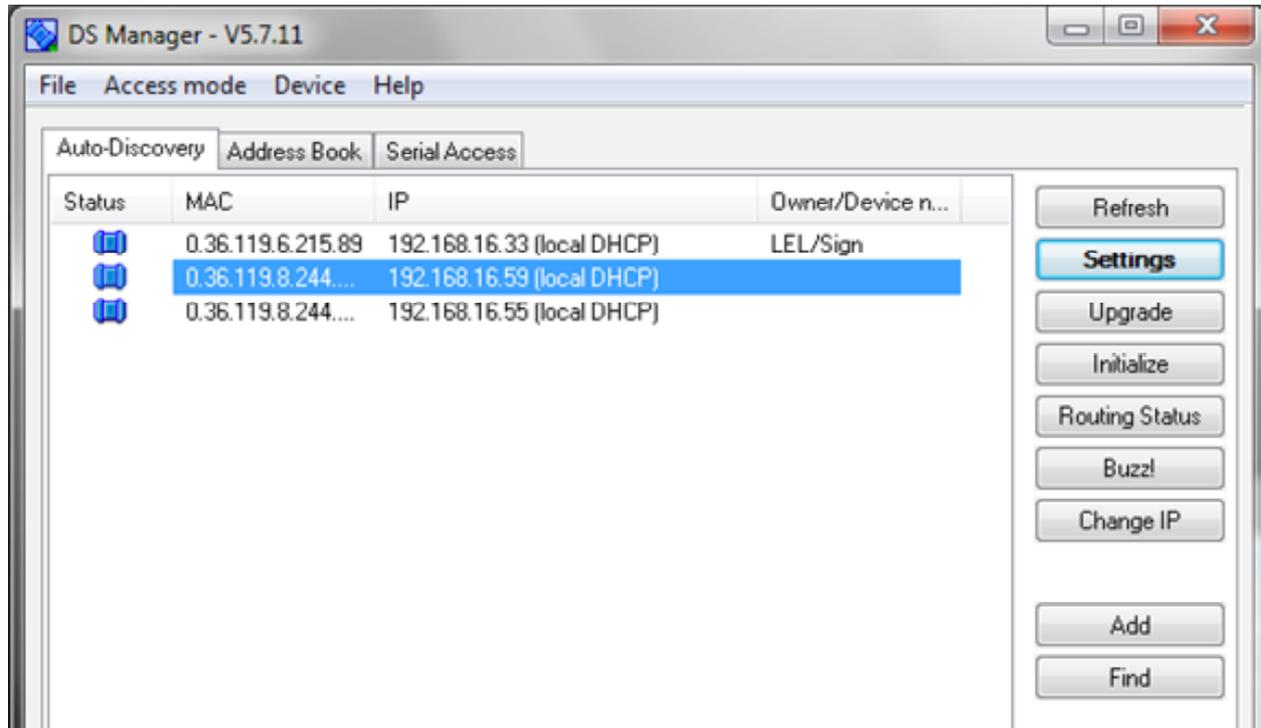


Configure the display IP Addresses Cont...

Open DS Manager and find the displays on the network.

They will have the IP addresses we assigned to them for our network.

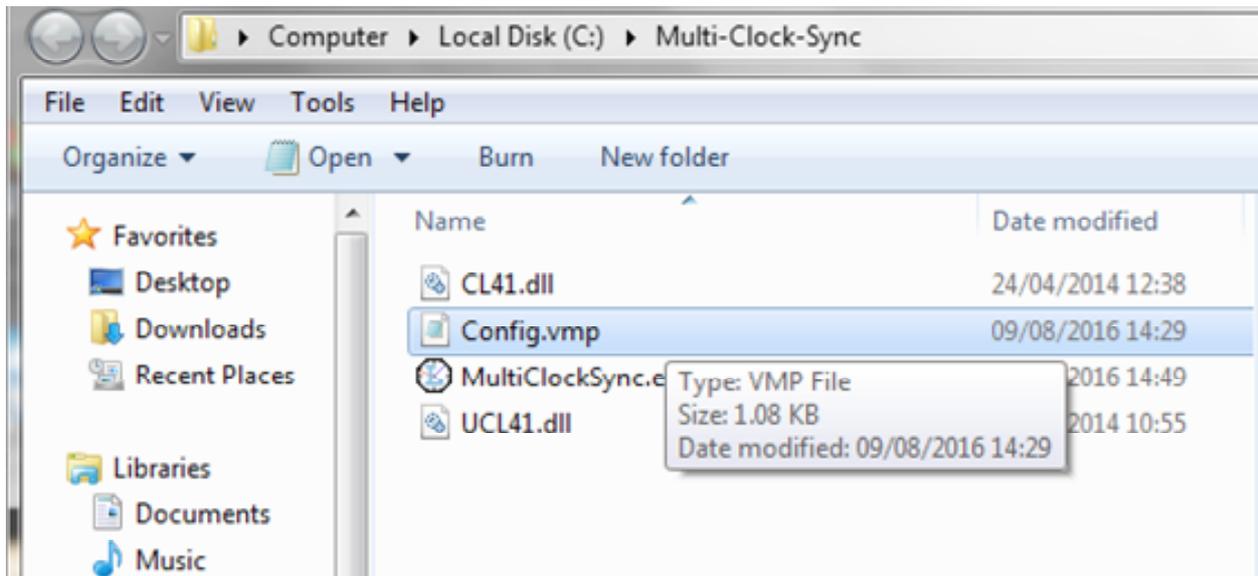
You can change the IP addresses to suit your network using the Change IP button.



Make a note of the IP Addresses you chose for your network.

Install the Multi-Clock-Sync software

Open Multi-Clock-Sync folder and locate the config.vmp file, supplied in disc format.



Edit the Config file to your IP addresses

Each networked clock must be assigned a gateway, as shown below.

```
Config.vmp - Notepad
File Edit Format View Help
{
  "Info" = "Clock Sync Configuration"
  "Debug"
  {
    "ShowTraceAtStartup" = "0"
    "SelectAllAtStartup" = "1"
  }
  "Options"
  {
    "Timezone" = "+1"
    "TimeOffset" = "0"
  }
  "Gateways"
  {
    "1"
    {
      "ID" = "EM1"
      "IsActive" = "1"
      "Text" = "Ethernet Module Clock 1"
      "Mode" = "ETHERNET"
      "IP" = "192.168.16.75"
      "Port" = "1001"
      "ConnectionTimeout" = "2000"
    }
    "2"
    {
      "ID" = "EM2"
      "IsActive" = "1"
      "Text" = "Ethernet Module Clock 1"
      "Mode" = "ETHERNET"
      "IP" = "192.168.16.57"
      "Port" = "1001"
      "ConnectionTimeout" = "2000"
    }
    "3"
    {
      "ID" = "EM3"
      "IsActive" = "1"
      "Text" = "Ethernet Module Clock 1"
      "Mode" = "ETHERNET"
      "IP" = "192.168.16.58"
      "Port" = "1001"
      "ConnectionTimeout" = "2000"
    }
  }
}

"Clocks"
{
  "1"
  {
    "IsActive" = "1"
    "SyncActive" = "1"
    "Protocol" = "P2"
    "Text" = "Clock 1"
    "Gateway" = "EM1"
    "DeviceAddress" = "F7"
    "ResponseTimeout" = "1000"
  }
}
```

Enter Time Zone difference

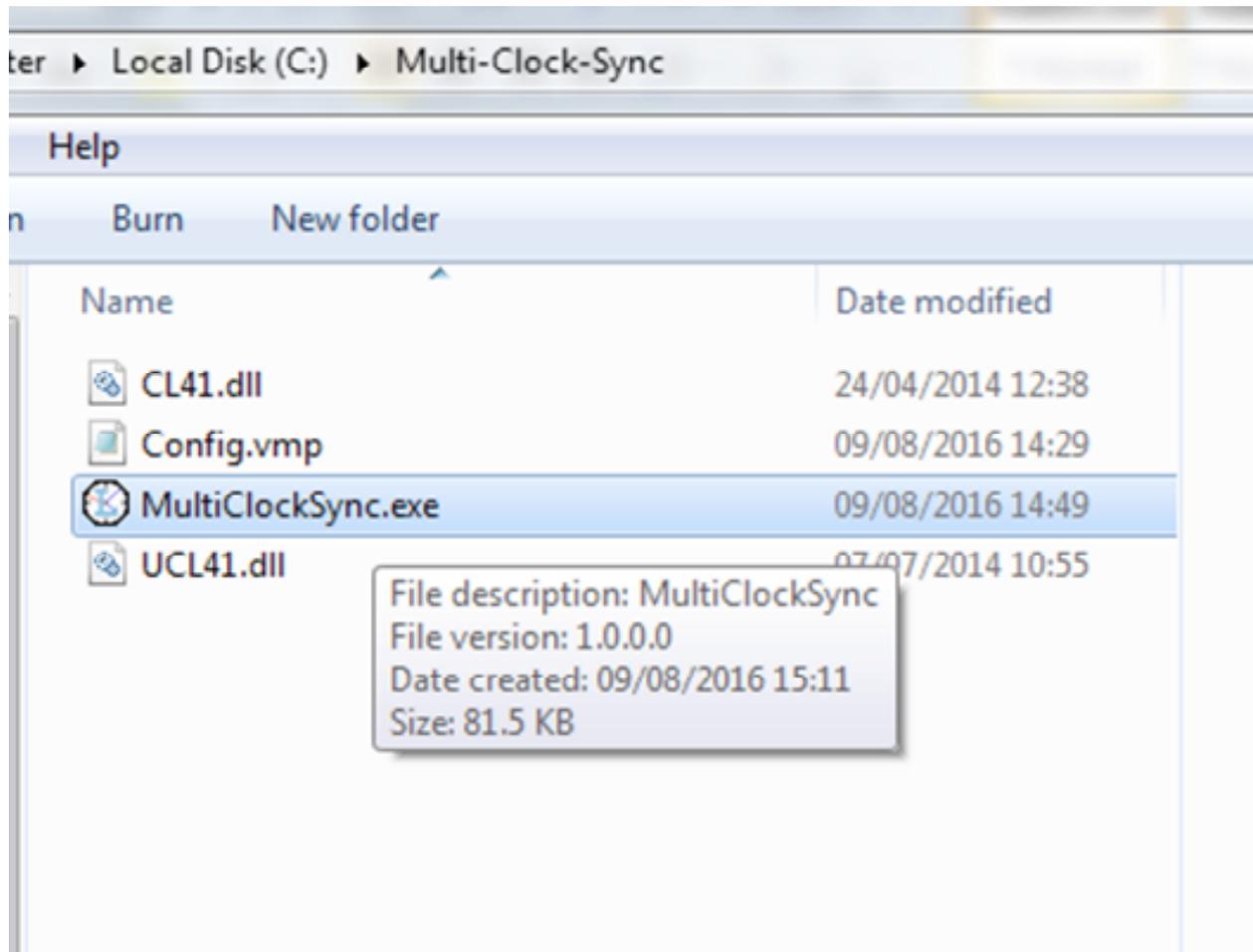
Enter clock 1 IP Address

Enter clock 2 IP Address

Enter clock 3 IP Address

You can re-name the clocks. For example, that of their location, like entrance.

Run the Multi-Clock-Sync software



Synchronise the clocks

The screenshot shows the 'Clock Sync' application window. The menu bar includes 'FILE', 'HELP', and 'SYNC'. The 'SYNC' menu is open, showing a 'Synchronise Clocks' option with a double-headed arrow icon. Below the menu is a table with two columns: 'CLOCKS' and 'Sync Okay'. The table contains two rows: 'Clock 1' and 'Clock 2', both with 'Sync Okay' in the second column. A status bar at the bottom displays 'Synchronising Complete' and a timer '15:58:58'. Three callout boxes provide instructions: one points to the 'Synchronise Clocks' menu item, another points to the 'Sync Okay' status in the table, and a third points to the status bar.

CLOCKS	Sync Okay
Clock 1	Sync Okay
Clock 2	Sync Okay

Application task status

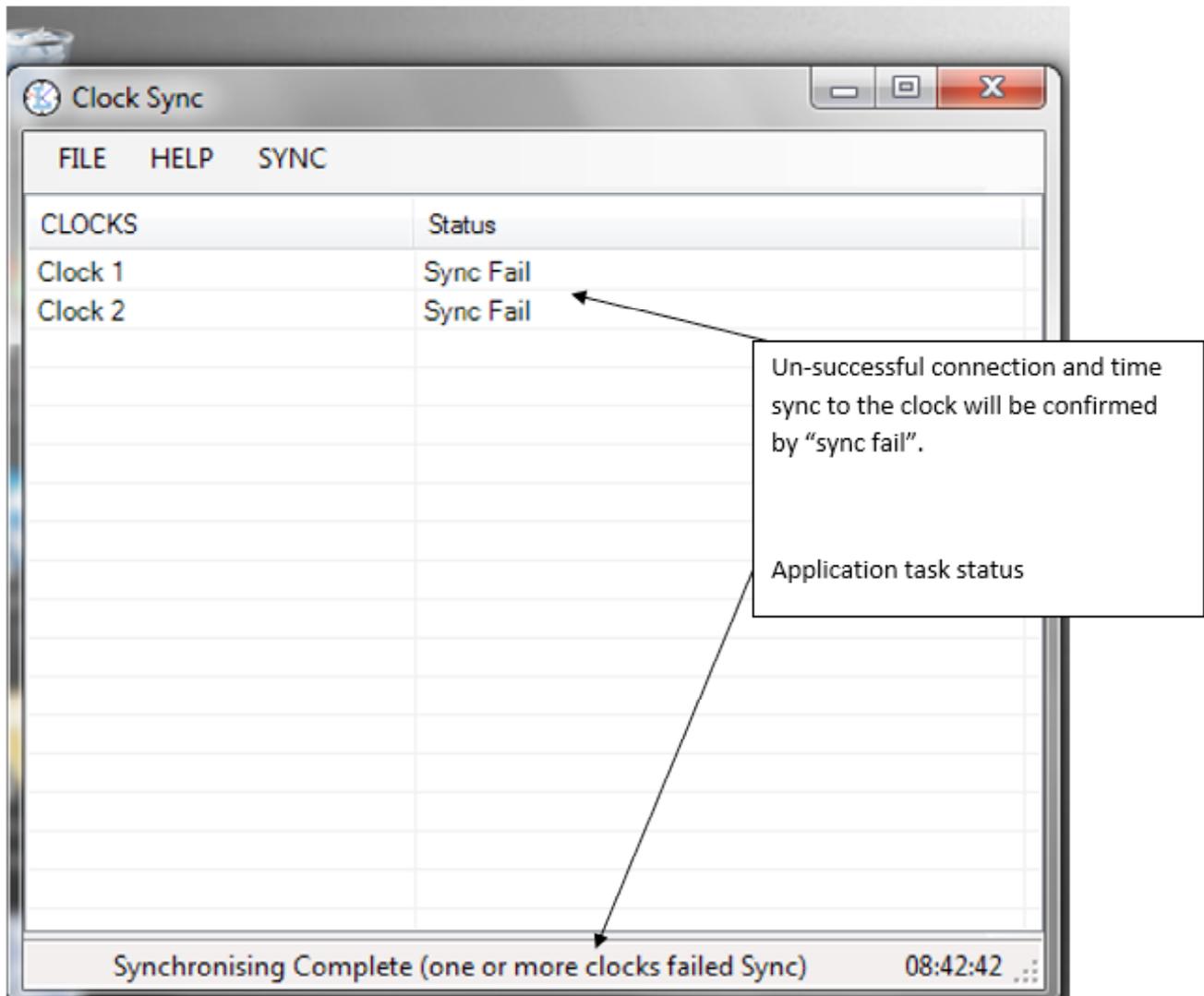
Synchronising Complete 15:58:58

Clock names can be changed in config file, see previous page.

Hover over SYNC and follow the drop down menu to Sync clocks, and click.

Each successful connection and time set to the clock will be confirmed by "sync okay".

If you get an error



If any or all of your clocks should fail to synchronise, there is a connection error between the software and the clocks.

First, determine if the clocks are actually available on your network by pinging their IP addresses from the same computer where the Multi-Clock-Sync software is installed.

Check the physical connections and the settings in DS manager until the clocks can all be pinged.

Then try to reconnect.

Declaration of CE Conformity

Declaration Reference : INTUITIVE Mk2
Issue Date : 30 April 2007
Products Covered : INTUITIVE Mk2 series
Title : DOC-INTUITIVE2

This is to confirm that the Product covered by this declaration has been designed and manufactured to meet the limits of the following EMC Standard :

EN61326-1:1997

and has been designed to meet the applicable sections of the following safety standards

EN61010-1:2001



Conditions

The meters are permitted a worst case error of 1% of A/D range during electro-magnetic disturbance, and must recover automatically when disturbance ceases without the need for human intervention, such as resetting, power-down etc.

The meters covered by this certificate must be installed in adherence to the following conditions :-

Signal cabling shall be routed separately to power carrying cabling (includes relay output wiring)

All signal cabling shall be screened. The screen shall only be terminated to the power earth terminal at the meter end of the cable.

Declared as true and correct, for and on behalf of London Electronics Ltd.

J.R.Lees Director

Waste Electrical Electronic Equipment (WEEE)

In Europe, this equipment must be disposed of in accordance with European Parliamentary Directive 2002/96/EC

This directive encourages recycling and the reduction of waste materials in the environment.

This means it must be sent to an approved recycling plant if you want to dispose of it.

It must not be thrown away with general rubbish.



WEEE Waste Recycling

If you are unable to dispose of this item locally, you may send it to us for recycling.

Conditions:

1. We will only accept items of our manufacture.
2. You must pay for the transport of the goods to us.
3. We will only accept items if they include a signed declaration by an authorised person in your organisation, stating that :-
 - i. The item is safe to handle and has no contaminants which may be harmful to health.
 - ii. You wish us to dispose of or destroy the item(s)

Notes

Record of Revisions

7 October 2019

Initial release

We design and manufacture a wide range of standard and custom monitoring and control equipment.

All our UK manufactured products have a 3 year warranty.

Real-Time Production-Line Displays



Large Digital Displays sealed IP65



Digital Panel Meters



Power Monitors



Bargraph Displays



Message Displays sealed IP65



Signal Transmitters / Isolators

