

# DDS NTP & ETHERNET SETUP INSTRUCTIONS MANUAL

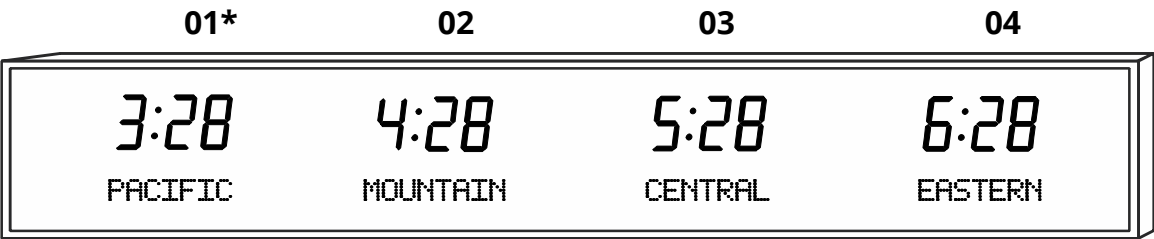
## READ FIRST:

**PLEASE SET UP THE NTP SERVER IP ADDRESS AND SYNC BEFORE MOUNTING THE CLOCK ON THE WALL.**

Access to the back of the clock will be needed for setup.

When off the network, the clock will run on the internal TCXO chip.

### CLOCK NUMBERS EXAMPLE:



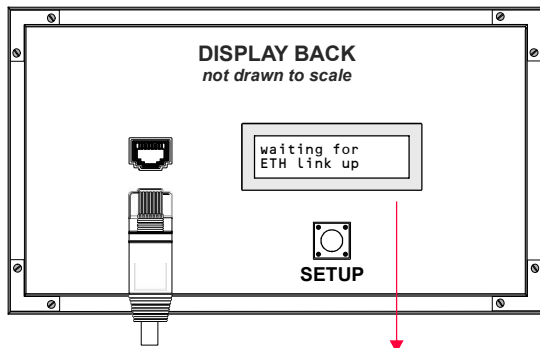
\* Older clocks before 2020 may start with 00 instead.

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# HOW TO OBTAIN IP ADDRESS

## ON MNP/BSA/BRS/BTZ VINYL CLOCKS (No Alphanumeric Displays)

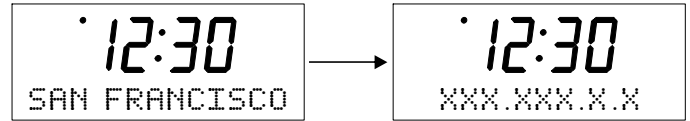


When clock is connected to power, LCD display on back of the clock will show "waiting for ETH link up".

Plug an Ethernet cable from your local Ethernet switch to the back of the clock. Wait for the DHCP server to provide an IP address.

You can also press and hold the Setup button for 5 seconds to get the clock's IP address to show. An asterisk next to the IP address will blink.

## ON BTZ ELECTRONIC ZONE CLOCKS (With Alphanumeric Displays)



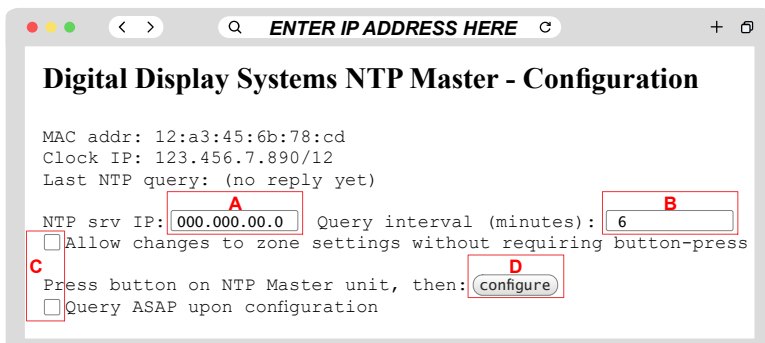
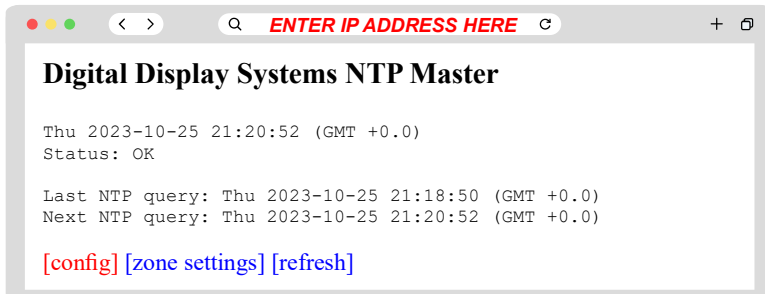
After connecting the clock to power, plug an Ethernet cable from your local Ethernet switch connected to an DHCP server to the back of the clock.

Press and hold the Setup button on the back of the clock for 5 seconds and the clock's IP address will replace the zone name on the front of the clock.

Press and hold the Setup button again to go back to the zone name.

Some clocks with 10-character limited zone names will have the IP address cut off. The first 1-2 characters may be cut off, but it will be based on your network schema.

# SYNC TO NTP TIME SERVER



If a "Fail" message appears, repeat the setup. A "Fail" message could be a result of an unavailable NTP server or a firewall block from the local network.

1. Using a computer connect to the same local network, type in the displayed IP address into your preferred web browser.
2. Click on the [config] link, then fill out settings.

**A. NTP srv IP:** Enter a time server IP address from your local network server provided by a network admin or from an external time server.

### List of public NIST time servers available

<https://tf.nist.gov/tf-cgi/servers.cgi>

**B. Query Interval:** Enter a query interval to determine often the clock will search and update from the server (5-60min)

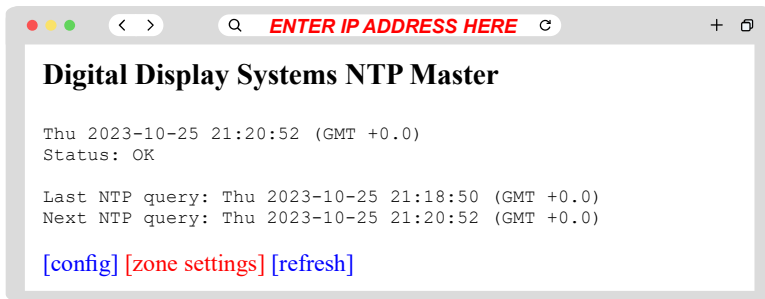
**C. Check the options if they apply:**

1. **Allow changes to zone settings without requiring a button-press** - allows you to configure the clock remotely without the need to click on the setup button, and the clock will update in the time set by Query interval.
2. **Query ASAP upon configuration** - it is recommended to choose this option to make sure the time server is available when initially setting up the clock.

**D. Press the setup button located on the back of the clock.** You have 30 seconds to click the configure button on the web page to complete NTP setup. Click on [config] again to verify the last NTP query was recent.

# SET UP TIME ZONES AND LOCATION NAMES

The following steps only applies to BTZ Time zone clocks with electronic zone names or to clocks with white vinyl zone names with Ethernet sync and setup (requested at time of order).



1. After initial setup, go to the main IP address page. Click on [zone settings]. You may need to press the Setup button on back of clock and refresh the page to proceed.

2. Enter settings for zone you want to set up.

**A. Clock number:** Refer to clock spec sheet for clock numbers of each zone. For clocks manufactured after 2020, first zone is 1, second zone is 2, etc.

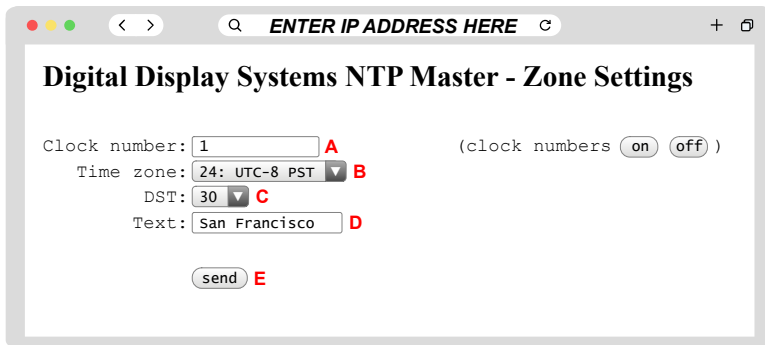
You can toggle clock numbers to show on the time display by clicking on or off.

**B. Time zone:** Select time zone code.

**C. DST:** Select DST code.

**D. Text:** Enter location name (10-15 char max). For white vinyl locations, text is not shown.

**E.** Click send to complete. Press back button and repeat for all zones.



## STATIC I.P. ADDRESS SETUP

The clock is configured to look for the DHCP server and wait for an assigned IP address. After an IP address is assigned, it is recommended to reconfigure in the DHCP server and assign the clock a static IP address.

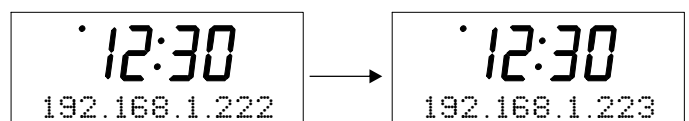
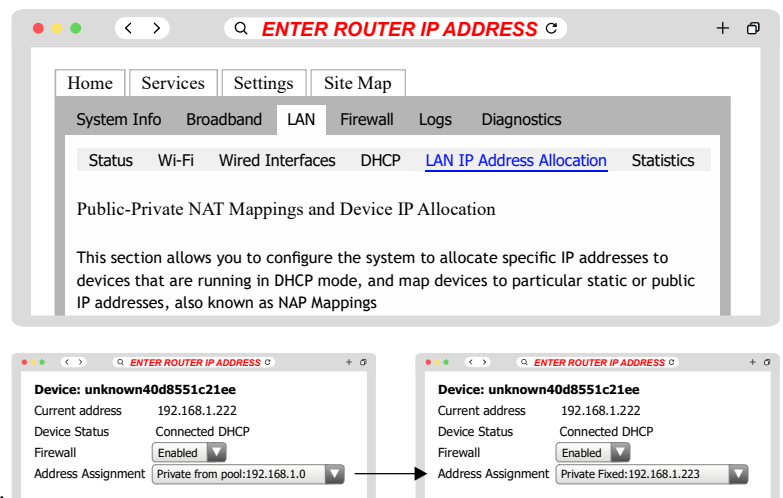
The static IP address will be maintained as long as its within the network with the DHCP server that assigned the IP address.

You will need admin access to router or DHCP server to make changes. Each DHCP server may have a different procedure. Refer to your DHCP manual for correct instructions.

### EXAMPLE SETUP (Comcast/ATT):

1. Enter router IP address in web browser to see router menu settings.
2. On router, click "LAN IP address allocation" and search for clock MAC Address or IP address originally assigned from DHCP server.  
  
MAC address can be found on silver label on back of clock.
3. Click on MAC address or IP address. Change Address Assignment from "Private from Pool" to "Private fixed", and select any available address in system.
4. Click save. Server may ask for admin password or access code.
5. Reboot clock by powering off and on clock. Click setup button for 3-5 seconds to show the newly assigned static IP address. Click again to return to location name (on electronic zones)

*DHCP server settings vary per customer's switch*



# TROUBLESHOOTING

## Factory Reset

On power up, press and hold the setup switch for 30 seconds.

## LED Dot on Bottom Right Corner

If LED dot appears, the clock has not received a signal from the NTP time server in the past 24 hours. Repeat initial setup instructions or verify time server is still available.

## IP Address Does Not Appear on Alpha Display

Press setup button on back of clock for 3-5 seconds to show IP address in zone name. Press for 3-5 seconds again to return to zone.

## MAC Address Does Not appear on Network

1. Check device is powered on and LEDs on Ethernet port is on.
2. Check device is connected to network via Ethernet switch/hub.
3. Network must support 10mb and half-duplex.
4. If network has auto-negotiate, disable and force 10mb and half-duplex.
5. Check router or DHCP server user manual for instructions on how search for devices.
5. Factory reset

## APPENDIX - Government NTP Addresses

Source: <https://tf.nist.gov/tf-cgi/servers.cgi>

Name	IP Address	Location
time-a-g.nist.gov	129.6.15.28	NIST, Gaithersburg, Maryland
time-b-g.nist.gov	129.6.15.29	NIST, Gaithersburg, Maryland
time-c-g.nist.gov	129.6.15.30	NIST, Gaithersburg, Maryland
time-d-g.nist.gov	129.6.15.27	NIST, Gaithersburg, Maryland
time-d-g.nist.gov	2610:20:6f15:15::27	NIST, Gaithersburg, Maryland
time-e-g.nist.gov	129.6.15.26	NIST, Gaithersburg, Maryland
time-e-g.nist.gov	2610:20:6f15:15::26	NIST, Gaithersburg, Maryland
time-a-www.nist.gov	132.163.97.1	WWV, Fort Collins, Colorado
time-b-www.nist.gov	132.163.97.2	WWV, Fort Collins, Colorado
time-c-www.nist.gov	132.163.97.3	WWV, Fort Collins, Colorado
time-d-www.nist.gov	132.163.97.4	WWV, Fort Collins, Colorado
time-d-www.nist.gov	2610:20:6f97:97::4	WWV, Fort Collins, Colorado
time-e-www.nist.gov	132.163.97.6	WWV, Fort Collins, Colorado
time-e-www.nist.gov	2610:20:6f97:97::6	WWV, Fort Collins, Colorado
time-a-b.nist.gov	132.163.96.1	NIST, Boulder, Colorado
time-b-b.nist.gov	132.163.96.2	NIST, Boulder, Colorado
time-c-b.nist.gov	132.163.96.3	NIST, Boulder, Colorado
time-d-b.nist.gov	132.163.96.4	NIST, Boulder, Colorado
time-d-b.nist.gov	2610:20:6f96:96::4	NIST, Boulder, Colorado
time-e-b.nist.gov	132.163.96.6	NIST, Boulder, Colorado
time-e-b.nist.gov	2610:20:6f96:96::6	NIST, Boulder, Colorado
time.nist.gov	global address for all servers	Multiple locations
utcnist.colorado.edu	128.138.140.44	University of Colorado, Boulder
utcnist2.colorado.edu	128.138.141.172	University of Colorado, Boulder
utcnist3.colorado.edu	128.138.140.211	University of Colorado, Boulder