## W8BH clocks

## Build a microcontrollerbased clock. Here are several.

Bruce E. Hall, W8BH


Clocks are fascinating tools, aren't they? We have used and relied upon them for centuries. In our lifetime, clocks have become quite precise; small timepieces are now capable of displaying the time to within microseconds of a common standard. It is nothing short of amazing.

Not only can we acquire such precise timepieces, but we can build them ourselves, too. I have built several different clocks, each with a particular purpose in mind. The following is a summary of my clocks with links to the appropriate documentation.

| Name | Microcontroller | Display | Time <br> Standard | Coding <br> Environment | Tutorial or <br> Description | Source <br> Code |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| NTP_DualClock | ESP32 | $320 \times 240$ <br> TFT LCD | NTP <br> (WiFi) | Arduino | $\underline{\text { Link }}$ | $\underline{\text { Link }}$ |

Let me know if you build any of these!
73, Bruce.

