HamClock
April 11th, 2023 Program

KC9SEB – Paul Mitchell
director3@frrl.org

Time in Ham Radio

Coordinated Universal Time (UTC), also referred to as Greenwich Mean Time (GMT), Universal Time (UT), or "Zulu" is an international time scale used in Amateur Radio, astronomical aviation publications and applications, weather reporting, the military, NASA, and other organizations and documents.

Most Amateur radio operators refer to it as UTC.

UTC uses 24-hour (military) time notation and is based on the local standard time on the 0? longitude meridian which runs through Greenwich, England, hence, Greenwich Mean Time. Midnight in Greenwich corresponds to 00:00 UTC, noon corresponds to 12:00 UTC, and so on. It is a universal "reference" time so anyone who uses it has a "point in time" reference to a specific location.

Therefore, if you are in a different location than the reference location, your local time would be either earlier or later referenced to that UTC location point.
So in a manner of speaking, everyone using UTC, uses the same clock!

The UTC time is the same worldwide and does not vary regarding the time zone or daylight-saving time. UTC is a very accurate atomic time standard sustained by atomic clocks located in national standards laboratories.
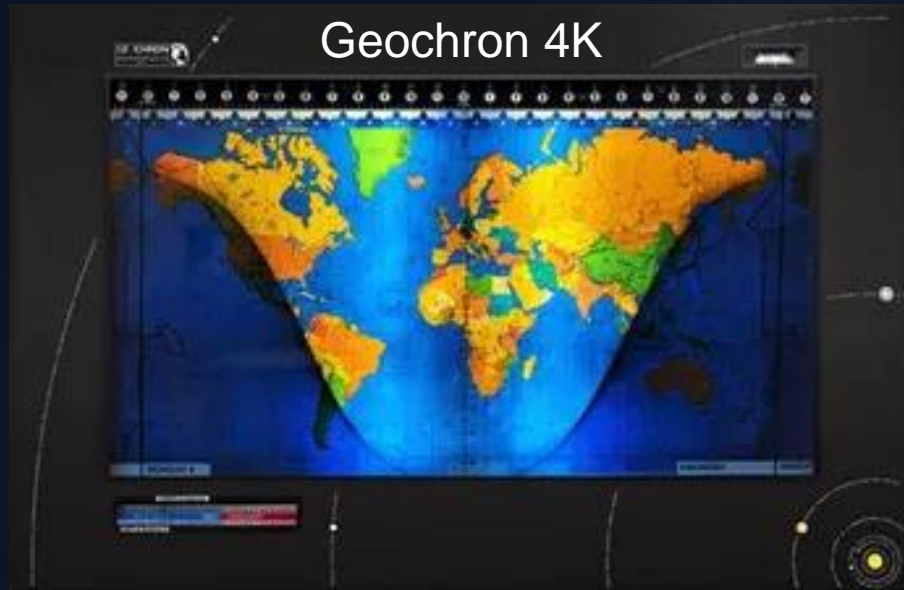
Significance to Time in Ham Radio

- Logging Software
- Digital Modes
  - Timeslots
  - FT8 etc..
- Beacons
- Grey Line
- Satellite
- Sunspot's / Weather
- And MANY Others…..

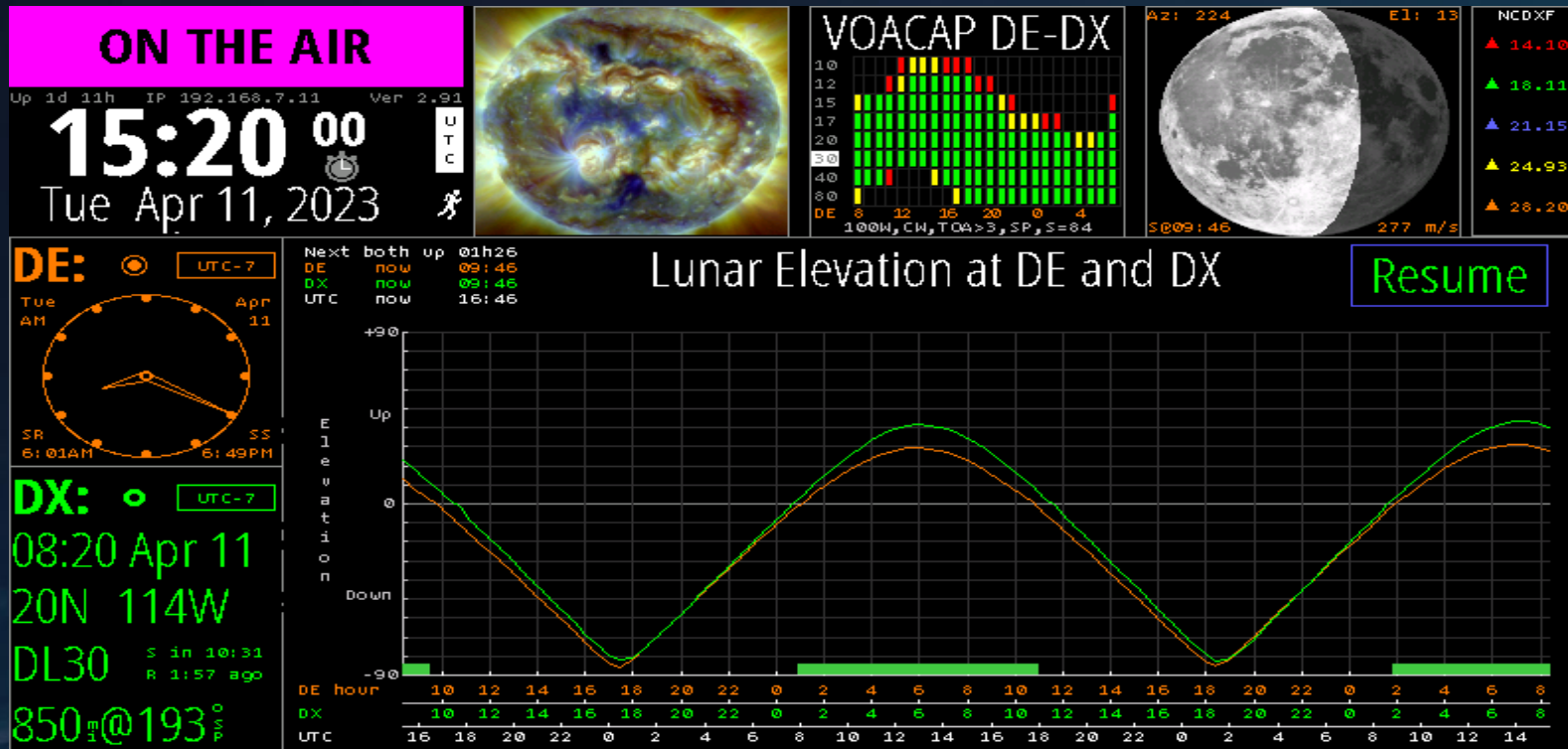REMEMBER TO TURN YOUR VFO BACK TONIGHT

Clocks and Ham Radio in the Shack…

Geochron 4K

$50

MFJ-12/24 HOUR DUAL LCD CLOCK

$399

* Extra Price for Overlays i.e.. Ham Radio & Display is extra *

$499*

HF-Clock

Introducing HamClock (HF-Clock)

HamClock was introduced in a QST article in the October 2017 issue and has been actively developed and expanded ever since. The software is "FREE" and maintained by Elwood Downey, WBØOEW
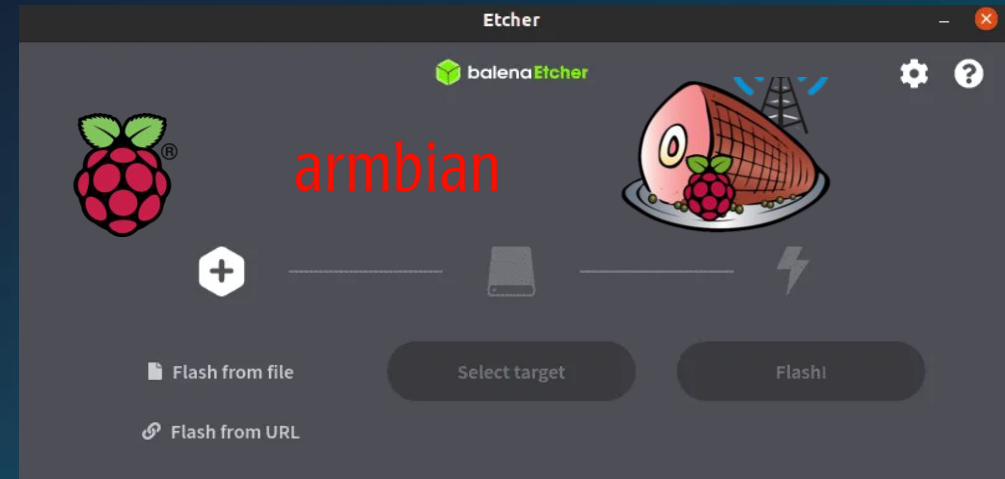

HF-Clock is also a commercially available product -- https://veritiumresearch.com/hf-clock/

Building a Hamclock…..
The "cheaper" way

Bill of Materials

- A single Board Computer (SBC)
  - Raspberrypi (Zero W or later)
  - An SD Card (8GB or >>)
  - A suitable O/S – Raspbian or Armbian
    - HamPi if you prefer
    - SD Card Writer
      - Etcher
    - Requires a Desktop (**X11**) not CLI
      - Unless Headless
  - A display – HDMI
  - PSU – (5V 2A or >>)
    - Note Connector (Micro/ USB-C)
  - Network / WIFI
    - HamClock will need to download maps / leverage NTP

- And of course, the "free" Software
  - Online Documentation is great >> https://www.clearskyinstitute.com/ham/HamClock
    - Installation is VERY well documented
    - Manual
    - FAQ's etc.

Building Hamclock Software…..

Ideally; you should have some LINUX skills (but not necessary*) - & NO it does not run on Windblows ☺

- The software needs "compiling"
  - Compilation software is typically installed with in the O/S
  - If necessary supplemental tools can be pre-installed >> Guide here >>
    https://www.clearskyinstitute.com/ham/HamClock/#tab-key
  - At compilation, the desired screen size is selected / built
    - Hamclock-800x480
    - hamclock-1600x960
    - hamclock-2400xx1440
    - hamclock-3200x1920
    - "headless" if you only want to connect via a browser (NO Display)

  - Access can be via any WEB Browser
    - http://*ipaddress*:8081/live.html
    - REST API is available at port 8080

    * If you want to use HamPI software image – it's pre-built (for those not so adventurous)

DEMO TIME

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Inovato Quadra
$ 34.95 USD

Inovato Quadra mini-PC, assembled with case, power adapter and HDMI cable

Please limit quantity to 2 Quadras per order so we can support as many people as possible. Thank you!

Pricing adjustments and shipping schedule

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https://www.inovato.com/product/inovato-quadra

TECHNICAL DETAILS

Quadra Specs

Processor	Allwinner H6 quad-core A53 ARM v8 64-bit SoC, 1.7ghz
Memory	2GB DRAM, 16GB eMMC (ROM)
Ethernet	100Mbit
WiFi	2.4 Ghz 802.11n
Micro SD Slot	Not needed for OS. Available for you to make backups or store data
USB	2 total (1×3.0, 1×2.0)
Bluetooth	No, but add with USB dongle (about $10)
HDMI	1 x standard HDMI, cable included. 1080p res for desktop. Video typical 360p.
Power	5v 2a USA power adapter included
Size (with enclosure)	92mm x 92mm x 22mm tall 3.62" x 3.62" x 0.86"
Heatsink	Included
Enclosure:	Included

A Couple of Questions…………..

- Would there be further interest in a program on SBC's?

- What LINUX Desktop is required for Hamclock?

Thank-You

Feedback and or questions?
>> director3@frrl.org