

Presentation



HamClock Raspberry Pi-Zero

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Topics



- 1. HamClock Description & Demo**
- 2. HamClock Installation**
 - a) Linux**
 - b) Mac**
 - c) Windows?**
- 3. Raspberry Pi-Zero & HamClock**

DX-er's Apps



- **Solar Weather**
- **VOACAP**
- **Spotter Nets/Clusters**
- **PSK Reporter**
- **Satellite Passes**
- **Grayline**
- **NCDXF Beacons**
- **Local & DX weather...**

DX-er's Apps



17 Feb 2025 1859 GMT VHF Conditions

SFI 185 SN 248 Item Status

A 18 K 4/ Pintry Aurora Band Close

X-Ray C1.5 6n EsEU Band Close

304A 159.2 @ SEM 4n EsEU Band Close

Ptn Flx 11 2n EsEU Band Close

Elc Flx 2110 2n EsNA Band Close

Aurora 3/n=1.99 EME Deg Fair

Aur Lat 65.6° MUF 15

Bz 0.0 SW 525.8 MS 6 12 18

Solar-Terrestrial Data
Provided by NONBH

HF Conditions Current Solar Ina

Band	Day	Night
80m-40m	Poor	Fair
30m-20m	Fair	Fair
17m-15m	Fair	Fair
12m-10m	Fair	Poor

Geomag Field ACTIVE
Sig Noise Lvl S3-S4
MUF US Boulder NoRpt
Solar Flare Prb 34%

Spotter	All Freq.	DX	Time	Info	Country
W2BRM	18105.5	FJ/DK6AS	19:13 17 Feb		St. Barthelémy
EA5YX	28514.0	VE1CHW	19:13 17 Feb	cq cq dx	Canada
NSKB	14026.2	WB4ABY	19:13 17 Feb	CW	United States
J3RK-@	28427.0	KC4TZZ/B	19:13 17 Feb	CQ Monkey	United States
K4CAE	14260.0	N7AWX	19:13 17 Feb	US-1918	United States
ON4JON-@	18104.4	WA4GBT	19:13 17 Feb	FT4	United States
IK7UXW-@	10136.0	CN8DN	19:13 17 Feb	FT8	Morocco
SQ5TOM-@	1841.3	SP9GPZK	19:12 17 Feb	FT8	Poland
PY1MK	28026.0	PJ2/NF9V	19:12 17 Feb		Curacao
E13LG-@	28026.0	PJ2/NF9V	19:12 17 Feb	Simplex	Curacao
N4WRO	14281.0	AC3KT	19:12 17 Feb	Park US-1592 - MD	United States
NSKB	14040.9	K9MA	19:12 17 Feb	CW	United States
IK7UXW-@	10136.0	8NDTG	19:12 17 Feb	FT8	Nigeria

VOACAP Online for Ham Radio – 19:15:41 UTC (02)

Select TX QTH: << Select a location >> or set Grid

Select RX QTH: << Select a location >> or set Grid

Chart: BPL Short Dash

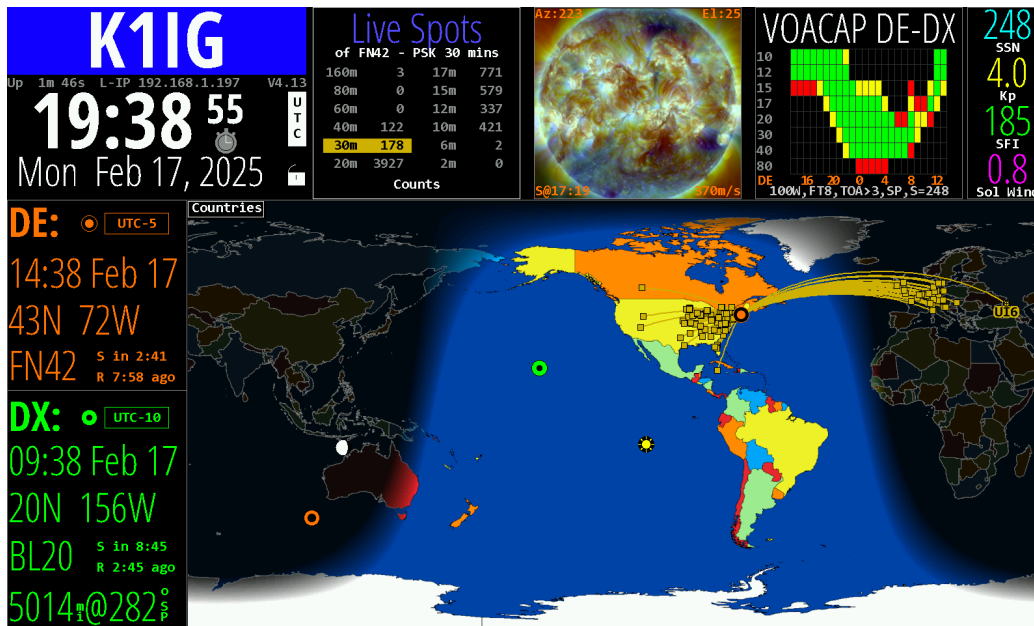
Snt	Rcv	Pwr
WIAW	59	59
	1000	

Call history UserText appears here when enabled.

Can We Consolidate These?



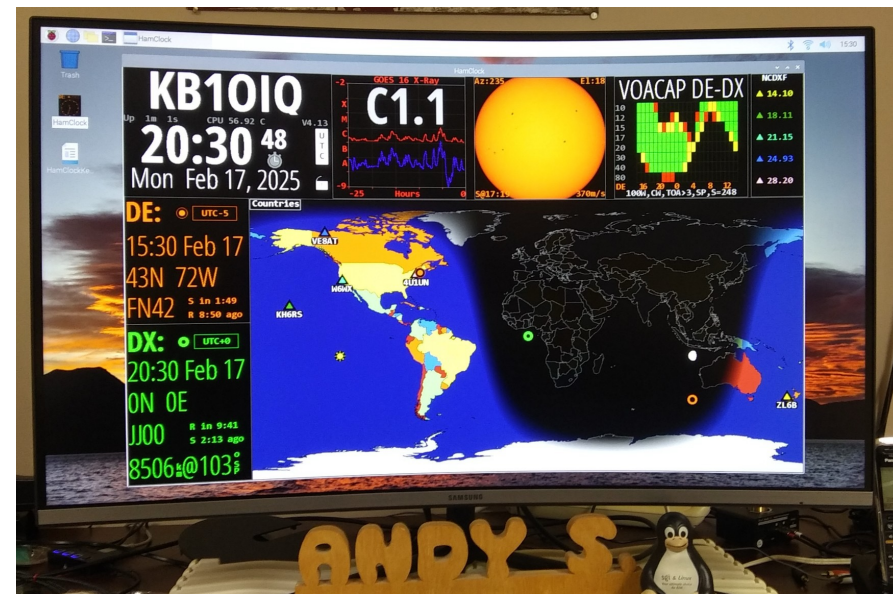
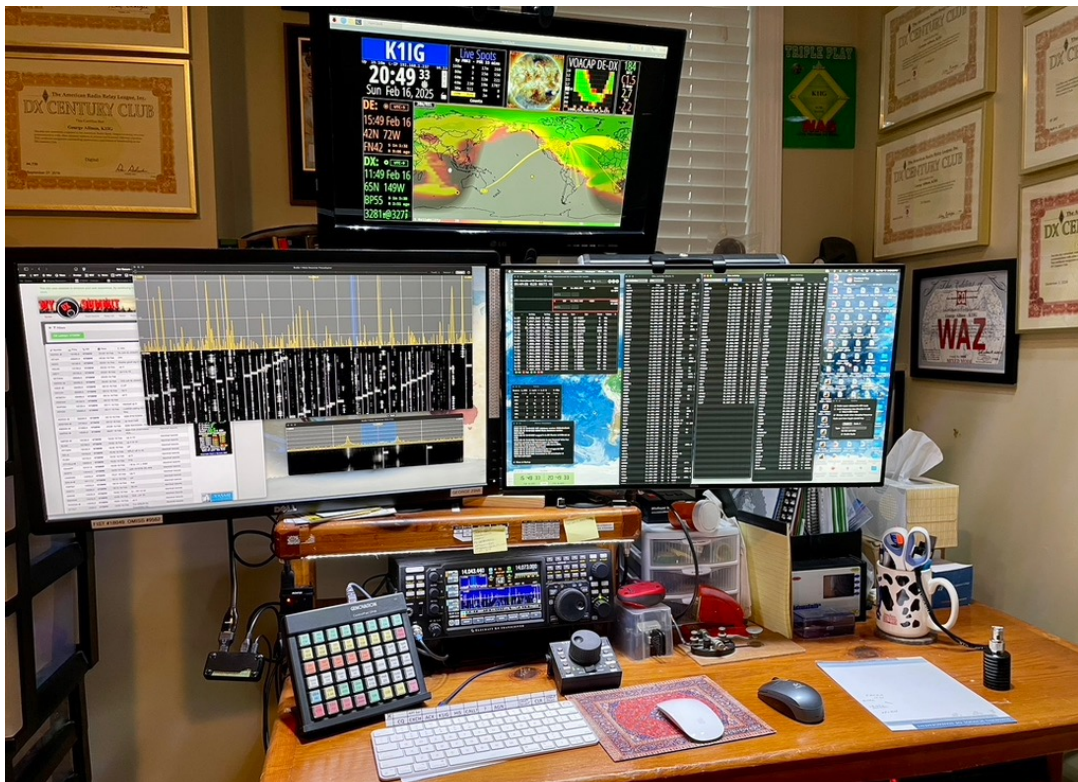
HamClock



A graphical, customizable app that provides real-time information for:

- Solar weather
- Spotting
- Propagation forecasts
- Satellite passes
- Terrestrial weather
- Beacons
- And much more...

HamClock In the Shacks



Buy One?



HFclock 9" Tiger Maple Model 1850-9T (includes power adapter)
\$399.99



HFclock 9" Walnut Model 1850-9W (includes power adapter)
\$399.99



HFclock 9" Cherry Model 1850-9C (includes power adapter)
\$399.99

Installation



<https://clearskyinstitute.com/ham/HamClock/>

This is a live read-only HamClock running in demo mode on my web server.

ON THE AIR
Up 15d 1h L-IP 72.167.36.44 V4.13
19:48 02
Unix 1,739,821,682

37°F
35% 29.83 in
NW @ 30 mph
Clouds

VOACAP DE-DX
A21301 211-50
1000, CU, T 0a-3, Sp, S 2.40

41.7
DE Temp
71.0
Humidity
9
Wind Spd
5
Wind Dir

On Air #se HUF-RT
A11
14057 K0ACPC US-6632
14059 N51LQ US-8643
14313 KB2HNN US-2064
14062 H7EEE US-3501
14337 W45HI US-7803
14075 N1PRR US-0917
14254 W0SEPC US-1051
14275 L7DJD US-7247
20340 W7LWA US-80075
14256 N7AHX US-1918
14061 W9HET US-1648
20074 W0LALH US-7730
14304 AB8AS US-7050
14055 K80N US-1032
14066 K4KVC US-6455
14074 C02KS US-1937
21291 A15SH US-7851
K7RLN US-11166
14074 W5FDT US-9757
14292 N4CN M40/W5-01

News highlights: See the complete version history in the Download tab and details in the User Guide.

- add new call sign menu to set desired rig PTT message or alternate title
- support more On The Air organizations such as WWFF
- hamlib and flrig now poll PTT to control ON THE AIR message

Now available as a **turn-key system** from:

- [Veritium Research](#) rebranded as HFClock, direct or in Europe from [Lutz Electronics](#)

Known issues in version 4.13:

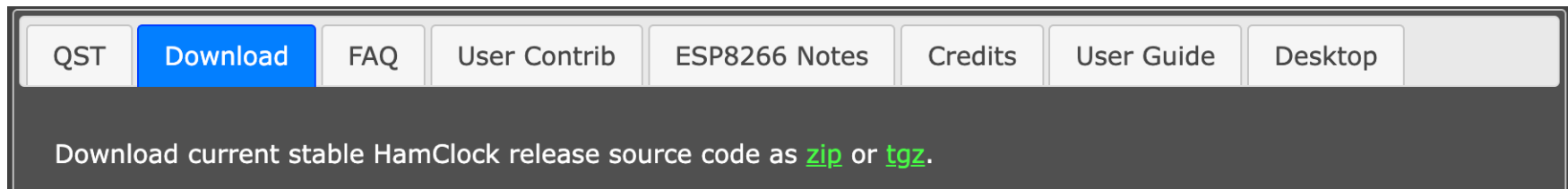
- DX Cluster can stall

QST Download FAQ User Contrib ESP8266 Notes Credits User Guide Desktop

Installation



- HamClock is a Linux-only program
- Hacks are available for other OS's (?)
- Download Zipfile at Download tab



Linux Installation



- Installation instructions for Linux systems are on the Desktop tab
- Difficulty: 4/10

QST Download FAQ User Contrib ESP8266 Notes Credits User Guide Desktop

To install HamClock on other UNIX-like systems follow these steps:
(works for RPi too if you prefer the scenic route)

1. Open a terminal directly on the target system GUI desktop to get a command line prompt.
2. Run these commands (use copy/paste to avoid typos):

```
cd
rm -fr ESPHamClock
curl -O https://www.clearskyinstitute.com/ham/HamClock/ESPHamClock.zip
unzip ESPHamClock.zip
cd ESPHamClock
make -j 4 hamclock-800x480
sudo make install
```

- If you get errors:
 - on Raspberry Pi or other Debian try loading these packages:

```
sudo apt-get update
sudo apt-get -y install curl make g++ libx11-dev libgpiod-dev xdg-utils
```
 - on Ubuntu try loading these packages:

```
sudo apt install curl make g++ xorg-dev xdg-utils
```
 - on macOS try installing [XQuartz](#) and [Xcode](#).
Then open [More developer tools](#) and install the command line tools. On macOS Sequoia, you may need to run the following command line in Terminal: `xcode-select --install`.
 - on FreeBSD try loading these packages:

```
sudo pkg install gcc xorg gmake curl
```

Mac Installation



- Install XCode and XQuartz
- Follow Linux installation instructions*
- Difficulty: 3/10

* Use quick-install file

A screenshot of a web page with a navigation bar at the top containing links: QST, Download, FAQ, User Contrib, ESP8266 Notes, Credits, User Guide, and Desktop (highlighted in blue). The main content area has a dark background and white text. It starts with the heading "To install HamClock on other UNIX-like systems follow these steps:" followed by a note "(works for RPi too if you prefer the scenic route)". There are two numbered steps: 1. Open a terminal directly on the target system GUI desktop to get a command line prompt. 2. Run these commands (use copy/paste to avoid typos): followed by a block of terminal commands: cd, rm -fr ESPHamClock, curl -O https://www.clearskyinstitute.com/ham/HamClock/ESPHamClock.zip, unzip ESPHamClock.zip, cd ESPHamClock, make -j 4 hamclock-800x480, and sudo make install. Below this, there is a section "If you get errors:" with three sub-points: on Raspberry Pi or other Debian try loading these packages: followed by terminal commands sudo apt-get update and sudo apt-get -y install curl make g++ libx11-dev libgpiod-dev xdg-utils; on Ubuntu try loading these packages: followed by terminal command sudo apt install curl make g++ xorg-dev xdg-utils; and on macOS try installing XQuartz and Xcode. Then open More developer tools and install the command line tools. On macOS Sequoia, you may need to run the following command line in Terminal: xcode-select --install. The final sub-point is on FreeBSD try loading these packages: followed by terminal command sudo pkg install gcc xorg gmake curl.

Windows Installation



Raspberry Pi-Zero 2W



- Basic Linux computer
- 512 MB RAM, 64 GB storage
- 64 bit operating system
- WiFi, Bluetooth, USB
- Single-task, “internet of things”



Raspberry Pi-Zero



- CanaKit contains everything you need:

- Board
- Memory
- Power supply
- Heatsink
- Dongles
- Case
- Instructions



CanaKit Raspberry Pi Zero 2 W Starter MAX Kit (64GB Edition)

[Visit the CanaKit Store](#)

4.5 ★★★★★ 21 ratings | [Search this page](#)

Amazon's Choice Overall Pick

100+ bought in past month

~~\$29.99~~ **\$25 for PART Members!**

✓prime One-Day

FREE Returns

Thank you for being a Prime member. Get \$100 off: Pay \$0.00 \$49.99 upon approval for Prime Visa.

Product details

Top highlights	Item details	Features & Specs
Additional details		
Brand	CanaKit	
Model Name	Raspberry Pi Zero 2 W	

User Requirements



- Users must provide:
 - WiFi
 - Monitor*
 - Keyboard*
 - Mouse*

* Maybe...

Building Steps



1. Unbox, assemble kit
2. Install OS
3. Configure
4. Auto-update
5. Download HamClock
6. Install HamClock
7. Get on the air!

Andy went from start to finish in 1½ hours... while making notes and troubleshooting



Demonstration

<http://10.0.0.11:8081/live.html>



**L-IP Address from HamClock
(under call sign)**

Building Help



Two options:

1. If you're comfortable with running a terminal program and installing software manually, get the kit and go to town. Andy will provide step-by-step instructions.
2. If you'd rather have a no-stress installation, Andy can make a house call or you can visit Andy's QTH with your Pi for assistance.

Building Help



- PART has gurus who can help you get the kits working
 - Webex
 - House calls
- No matter what your experience level is, you can make it work... *We Will Help You*



Kits



-
- We have nine Pi-Zeroes for \$25 each now
 - If you buy ANY Raspberry Pi version between now and the next meeting (March 18), you will get \$25 back*

*** Notes:**

- Must be a PART member
- One per member/family
- Provide proof of purchase

And Finally....



- Keep the club informed of your progress, whether good or bad. We want to build our knowledge base.
- Make recommendations
- Send pictures.
- What should be our next project?

Have Fun!



CanaKit Raspberry Pi Zero 2 W Starter MAX Kit (64GB Edition)

[Visit the CanaKit Store](#)

4.5  21 ratings | [Search this page](#)

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