

APRS

Presented by:

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APRS

Areas covered:

- Brief History
- Technical Requirements
 - Equipment



APRS: WHAT IS IT?

Two way tactical real-time digital communication system between all assets in a network sharing information about everything going on in the local area.



APRS: WHAT IS SHARED?

- Positions
- Station capabilities
- Objects
- Weather reports
- Weather Alerts from NWS
- Telemetry



APRS: WHAT IS SHARED?

- Messages addressed to stations
- Bulletins to wider groups
- Queries and Responses
- Ham Radio of Things
- User Defined Data types



APRS: WHAT IS SHARED?

Designed for local communications over RADIO links, not global messaging through the Internet.

You do not need the Internet to TX and RX data on APRS.

Information in APRS comes directly from users, no central servers.



APRS: TECHNICAL

Digital repeaters (digipeater) use a “store and forward” approach. A packet is received, examined, then possibly modified and retransmitted. It can be retransmitted on the same radio channel or transmitted on multiple radio channels.

Packets received on one channel can be retransmitted on different channels.



APRS: TECHNICAL

iGate is a device that connects APRS systems to the Internet. It receives packets from local radio frequencies and forwards them to the APRS-Internet System.

This enables global access to APRS information.

Build your own iGate here:

<https://www.besthamradio.com/building-your-own-aprs-igate/>



APRS: EQUIPMENT

- RADIO- an HT will work
- Antenna
- TNC- Terminal Node Controller to interface the radio to GPS and PC
- GPS RX – receive only unit without display will work for reporting position
- Cables to interconnect all of these items



APRS: EQUIPMENT

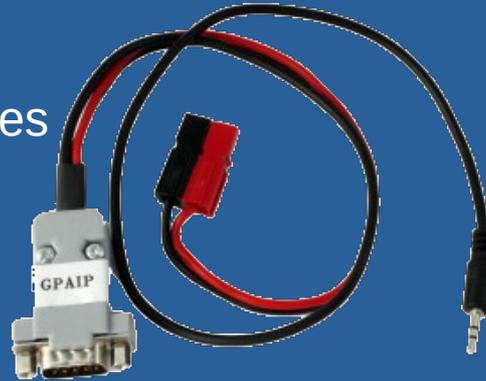
Byonics TinyTrak3Plus
TNC



Byonics GPS5
RS-232 serial GPS



Radio interface cables



[Http://www.byonics.com](http://www.byonics.com)



APRS: EQUIPMENT

HT with built in TNC, GPS, and APRS



YAESU FT5D



KENWOOD TH-D75



ANYTONE AT-D878UVII PLUS



VGC VR-N76



APRS: EQUIPMENT

Mobiles with APRS



AnyTone AT-D578UVIII
Plus Tri-Band



YAESU FTM-
500DR



YAESU FTM-200DR



APRS: EQUIPMENT

AEA Model
PK-232MBX



TNCs



PACComm Pac-Comm TNC-200



Heathkit HD-4040

Kantronics
KPC-3



APRS: Internet Sites

<http://www.openaprs.net>

<http://www.aprs.fi>

<http://www.aprsworld.net>

<http://www.db0anf.de/app/aprs>

<http://www.wulfden.org/APRSQuery.html>



APRS: Internet Sites

The screenshot shows the APRS.fi website interface. The main map displays a dense network of APRS stations across the Chicago area, represented by various colored icons and call signs. A red car icon with the text "loading..." is overlaid on the map. The right sidebar contains navigation and search options:

- aprs.fi Login
- (1) Earth 3D Map 3DEarthMaps Open >
- Track callsign: Clear
- Search ?
- Address, city or Locator: Clear
- 60606 Search ?
- Show last: 1 hour Show all
- Track tail length: 1 hour
- Wx: 75°F 85% 1012 mbar 2.8 MPH S
- Other views:
 - Station info
 - Raw packets
 - Status packets - Beacon packets
 - APRS/CWOP weather - Telemetry
 - Messages - Bulletin board
 - Prefix browsing
 - Google Earth KML ?
 - Data export tool
 - Preferences - My account
- Information:
 - Stations currently moving - User guide - FAQ - Blog - Discussion group - Linking to aprs.fi - AIS sites - Service status - Database statistics - Advertising on aprs.fi - Technical details - API - Change log - Planned changes - Credits and thanks - Terms Of Service - iPhone/iPad APRS
- Idle: points updated 16, deleted 0
- Tweets by @aprsfi



APRS: Internet Sites

The screenshot shows a map of a harbor area with several ship icons. A popup window is open over the 'SPIRIT OF NAVY PIER' icon. The popup contains the following information:

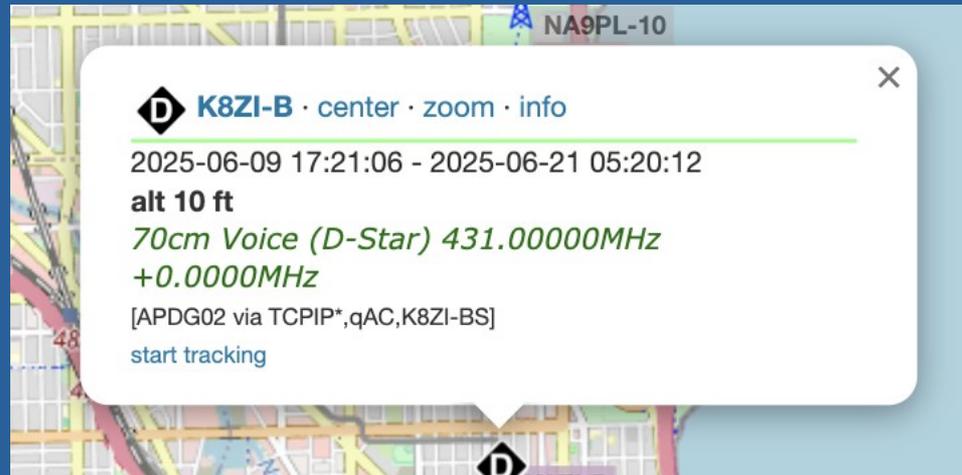
SPIRIT OF NAVY PIER · center · zoom · info

2025-06-21 03:31:38 - 2025-06-21 05:37:34
AIS: length 42m width 10m draught 1.7m
MMSI 367350360 IMO 423392 Call WCY3193
Navstat: Moored
Passenger
USCHI<>USCHI
[ais via Snhnry]
start tracking

Other ship names visible on the map include ODYSSEY LAKE MI, IGAN, Spirit of Chicago, Mystic Blue II, Mystic Blue I, and South Overlook.



APRS: Internet Sites



A screenshot of an APRS (Automatic Packet Reporting System) information popup window. The popup is white with a green border and a close button (X) in the top right corner. It is overlaid on a map background. The text inside the popup provides details for station K8ZI-B, including its call sign, location actions, active time, altitude, frequency, and a tracking link.

D **K8ZI-B** · center · zoom · info

2025-06-09 17:21:06 - 2025-06-21 05:20:12

alt 10 ft

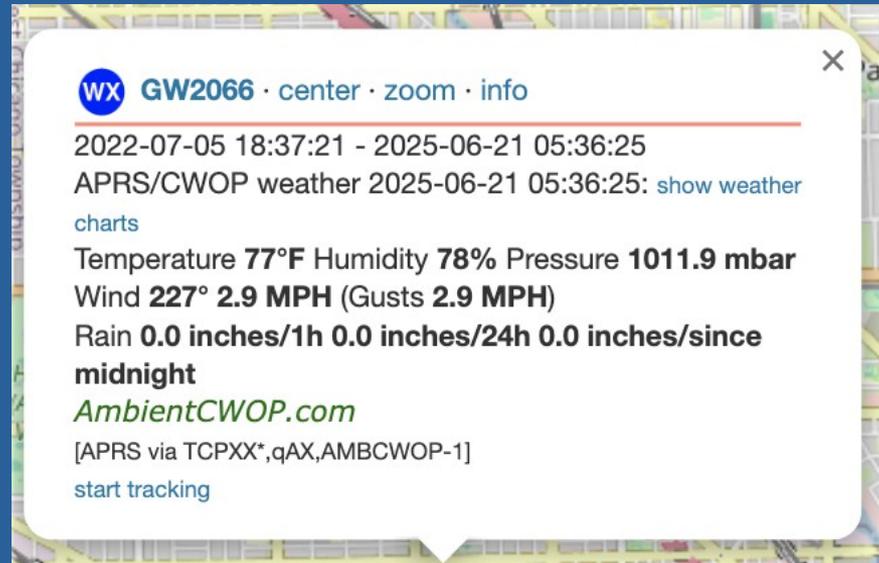
70cm Voice (D-Star) 431.00000MHz
+0.0000MHz

[APDG02 via TCPIP*,qAC,K8ZI-BS]

[start tracking](#)



APRS: Internet Sites



WX **GW2066** · center · zoom · info

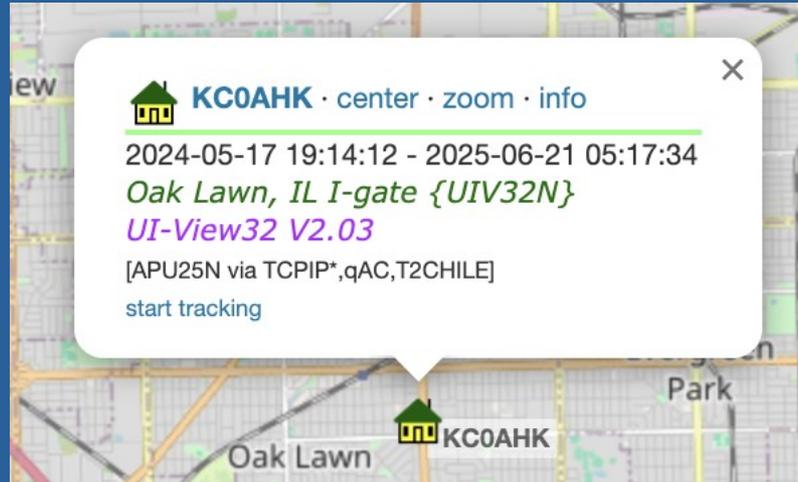
2022-07-05 18:37:21 - 2025-06-21 05:36:25
APRS/CWOP weather 2025-06-21 05:36:25: [show weather charts](#)
charts

Temperature **77°F** Humidity **78%** Pressure **1011.9 mbar**
Wind **227° 2.9 MPH** (Gusts **2.9 MPH**)
Rain **0.0 inches/1h 0.0 inches/24h 0.0 inches/since midnight**

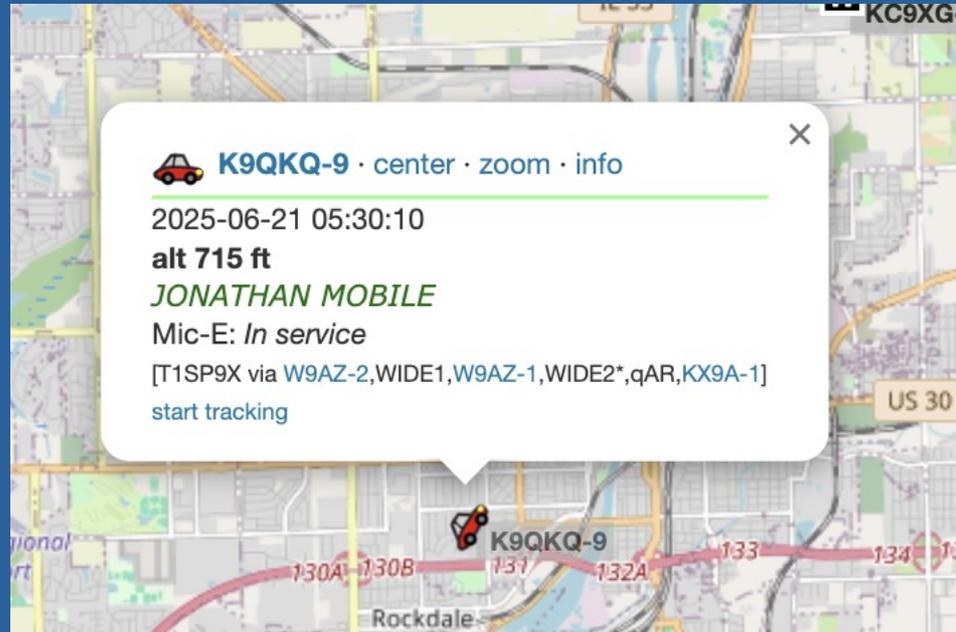
[AmbientCWOP.com](#)
[APRS via TCPXX*,qAX,AMBCWOP-1]
[start tracking](#)



APRS: Internet Sites



APRS: Internet Sites



APRS: CONCLUSION

- Remember this is a terrific hobby!
- If you need help, please ask! There are plenty of experts willing to help.
- Repeaters, servers, and networks require maintenance and funding.
- Get involved in your local radio club and help others around you.



APRS: Questions & Comments

