

# APRS

## Automatic Packet Reporting System



APRS was developed in the mid 80's by Bob Bruninga, callsign WB4APR, currently a senior research engineer at the United States Naval Academy. The acronym "APRS" was derived from his callsign. In the 1990's as GPS excitement dominated many new applications, the "P" was often referred to as "Position" instead of the original "Packet". But this so skewed the public perception of APRS as only a GPS and Weather Position tracking system, that recently, the emphasis has returned to the broader "Packet" applications.

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APRS is a real-time tactical digital communications protocol for exchanging information between a large number of stations covering a large (local) area. As a multi-user data network, it is quite different from conventional packet radio. APRS contains only four packet types, Position/objects, Status, Messages and Queries. The Position/object packets contain not only the latitude/longitude, course and speed, but also fields for power, antenna height and gain and voice operating frequency. The map display uses these fields to plot communication range and connectivity of all participants and facilitate the ability to contact users during both routine and emergency situations. Position/objects can also contain Weather information or can be any number of dozens of standardized weather symbols. Each position/object packet can use any of several hundred different symbols.

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In its simplest implementation, APRS is used to transmit real-time data, information and reports of the exact location of a person or object via a data signal sent over amateur radio frequencies. In addition to real-time position reporting capabilities using attached Global Positioning System receivers, APRS is also capable of transmitting a wide variety of data, including weather reports, short text messages, radio direction finding bearings, telemetry data, short e-mail messages (send only) and storm forecasts. Once transmitted, these reports can be combined with a computer and mapping software to show the transmitted data superimposed with great precision upon a map display.

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# Frequencies

APRS is transported over the AX.25 protocol using 1200 baud Bell 202 audio frequency-shift keying(AFSK) on frequencies located within the amateur 2-meter band:

- ..North America: 144.390 MHz
  - ..Australia: 145.175 MHz with 144.390 MHz available for as a secondary frequency, primarily for satellite and DX work.
  - ..New Zealand: 144.575 MHz (National APRS) and 144.650 (digipeaters) -- check with locals for details
  - ..Argentina: 144.930 MHz
  - ..Brazil: 145.570 MHz
  - ..Europe: 144.80 MHz
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# WEB PAGES

[http://en.wikipedia.org/wiki/Automatic\\_Position\\_Reporting\\_System](http://en.wikipedia.org/wiki/Automatic_Position_Reporting_System)  
<http://eng.usna.navy.mil/~bruninga/aprs.html>  
<http://web.ew.usna.edu/~bruninga/index.html>  
<http://www.usmartdigi.com/>  
<http://www.n3ujj.com/aprs/resources.html>  
<http://www.ui-view.org/>  
<http://www.tapr.org/~kh2z/aprsplus/>  
<http://www.byonics.com/>  
<http://aprsworld.net/>  
<http://www.tawg.org/>  
<http://www.winaprs.org/>  
<http://www.wa4dsy.net/>  
<http://www.findu.com/>  
<http://www.aprsdepot.com/forum/>  
<http://www.apritch.myby.co.uk/uiview.htm>

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# Equipment

## TNCs and Digipeaters

- [AEA \(see TimeWave\)](#)
  - [..Kantronics KPC-3 Full-function TNC/digipeater](#)
  - [..TimeWave](#)
  - [..MFJ](#)
  - [..USB micro TNC PLUS](#)
  - [..Paccomm](#)
  - [..TAPR](#)
  - [..Tinytrak4 \(NEW\)](#)
  - [..TNC-X Kiss-only TNC](#)
  - [..Tracker 2 Kiss-only TNC/digipeater/tracker/anti-tracker \(NEW\)](#)
  - [..UIDIGI Digipeater firmware for TNC2 \(and compatible\) TNCs](#)
  - [..µSmartDigi\(tm\) Digi and D-STAR Gateway](#)
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## APRS-capable Radios

- ..Alinco DR-135TP
  - ..Alinco DR-135T plus [..T2-135] S/M TNC which fits inside Alinco (NEW)
  - ..Alinco DR-620T (Discontinued)
  - ..Alinco DR-635T
  - ..Kenwood TM-D700A, ..TM-D710A
  - ..Kenwood TH-D7A, TH-D7A(G), ..TH-D7E
  - ..OZ4HZ's Tracker with 5w transmitter
  - ..PocketTracker (Discontinued)
  - ..ZPac OpenTracker inside Handheld radio's battery pack
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## Radio Direction Finding Equipment (RDF)

- Agrelo (discontinued)
- ..DSP-RDF from Byonics
- ..Montreal Doppler III

## APRS Compatible GPS Units

- ..Hand Held GPS
- ..Vehicle GPS
- ..GPS without Display

Retrieved from "<http://info.aprs.net/index.php?title=Hardware>"

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## Other APRS Hardware

- [..AntiTracker](#)
  - [..AVR-based TNC](#)
  - [[..Linksys NSLU2](#) plus [..HamSlug](#) or other alternate firmware
  - [..SiteAlert](#) Remote Site Monitor
  - [..Sound Card / Radio Interfaces](#)
  - [..WhereAVR](#)
  - [..GpsPlot](#) Open source B.I.Y.S. - Decodes / displays to a GPS (NEW)
  - [..DataTrak](#) Telemetry firmware for Tiny Trak 3 (NEW)
  - [..GSM APRS](#) GSM Based APRS Unit with Open-source firmware/software (NEW)
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APRS hardware:

Kantronics tncs

PacComm tncs

MFJ tncs

TinyTrak GPS encoders

TAPR GPS encoders

OpenTracker

Tiny Tracker Clones

Kenwood TM-D700A



## APRS software:

Xastir

APRSdos, MacAPRS, WinAPRS

javAPRS

UI View

