PocketPacket
Desktop Edition

Usage guide

Using PocketPacket is very easy, especially if you are already familiar with some other APRS* software. However, if you are new to APRS, or do not understand some settings, please take a moment to read this guide, which will walk you through all available windows and options.

I hope you enjoy this application as much as I did creating it.

73 de SV1OAN

*APRS® is a registered trademark of Bob Bruninga (WB4APR).

Detailed description

PocketPacket started as an APRS client for iPhone/iPod Touch/iPad devices, but is also available for the Mac desktop or laptop. The "Automatic Position Reporting System" is a packet communications protocol used by amateur radio operators (hams) around the world. APRS packets may report position, status, station capabilities, weather or other information in real time. They can also be used for broadcasting announcements or one-to-one messaging. Position packets include a visual description of the referenced object, by means of a specific symbol/icon that should be placed on a map. PocketPacket implements most of the APRS Specification, according to *APRS Protocol Version 1.0, Addendum 1.1* and *Proposal 1.2* (http://www.aprs.org).

APRS data is sent over the air using AX.25 protocol frames. PocketPacket incorporates a software-based TNC, allowing you to directly capture and visualize, or encode and transmit 1200 baud packets (AFSK modulation) using a VHF radio transceiver. With PocketPacket you can also send and receive packets via the global APRS-IS network (APRS Internet Service), which forwards APRS data over the Internet.

Incoming data is presented on a map, as most packets define some object,

with a specific symbol and location. By selecting a symbol, you can view the latest information sent for the corresponding object, as well as the raw packets that produced it. All available objects are also shown in a list, which allows you to search for the ones you are looking for. Messages and bulletins are shown in a separate set of screens, structured like an e-mail client.

With PocketPacket you can follow the status of the APRS network or submit your station's info. Monitor moving objects, get real time weather reports directly from local stations and more. Especially with the iOS version and an iPhone/iPod Touch/iPad, you can have a full-fledged picture of packet activity in a small, portable package - ideal for field work or the ham shack.

Windows and options

The main window - the Map

Upon opening the app, you are presented with the **Map** window. Here you can see all available APRS objects placed at their corresponding positions. Each object is represented by an icon, or in APRS terms, a symbol. All available object names are show in a table, on the right side. By double-clicking a name, the map will slide to center on the corresponding object. You can narrow down the list of objects, by using the search box in the toolbar.

Take a moment to browse through the entries of the **View** menu and the available toolbar buttons. Their actions should be straight-forward. The button with the "target" icon will center the map to your current location, which should be manually set by entering your latitude and longitude coordinates in **Preferences**. By double clicking the map you can zoom in, while doing the same while holding the *ctrl* button will make the map zoom out.

Incoming data flow is controlled by switches in the two menus, **APRS-IS** and **Audio Modem**. These are the two sources of data to get packets from, as well as the output paths which are used to transmit your status and messages (all of their specific options are set in Preferences - read on). By default, APRS-IS should be connected. That's where the objects that show on the screen come from - the Internet. Select **Disconnect** to terminate the connection and **Connect** to start it up again. The **Transmit** switch controls if you want to send data via the corresponding path at regular intervals. **Packet flow** will show you the raw packets as they are being sent and received. For APRS-IS, select **Status** to view the server's status page, which lists if your connection is verified or not, as well as the number of packets that have been exchanged between the server and PocketPacket.

Note that, as APRS-IS servers send live data, the connection to the server remains open throughout your APRS-IS session. While the amount of data transferred is not excessive, keep this in mind when connecting via a mobile/ cellular network.

When clicking on a symbol, a small balloon will pop up, that contains the symbol's name or callsign, as well as other details. Each APRS packet, may contain additional information for an object, except from its current location and name. For example, weather stations use a standard format to encode temperature, wind, humidity and pressure measurements, while moving objects, such as cars and trucks, can report their current course and speed. All packets may also include a generic comment, in order to display their sender's current status or other data. All these fields are presented in the balloon. Three buttons at the bottom, allow you to send an APRS message to the callsign that sent the data (if it supports it), search QRZ.COM for more information, or view the raw packets that produced the respective details.

A network connection is necessary for displaying the map, as map data is provided by OpenStreetMap over the Internet.

The Messaging window

Open messaging, either from the **Window** menu or the corresponding button in the main window's toolbar (you may have to enable it). On the left side, you will see the three "folders" messages are arranged into - Inbox, Sent and Bulletins. In **Inbox** you will find all incoming messages sent to your callsign or any of the callsigns you have defined as Message groups in Preferences. Message actions - **Compose**, **Reply** and **Delete** are available both as icons in the toolbar and as entries in the **Message** menu.

When composing a message, as soon as you press the **Done** button, the message will be delivered with all enabled connections (APRS-IS and/or the Audio Modem).

The Preferences window

This is where you define all variables and select all application options. Settings are grouped in 5 sections.

The **General** section contains your callsign, location, symbol, comment and transmit interval. The **Callsign** you specify will be used for connecting to the APRS-IS server and as the source of generated packets, in case you enable transmission. If you do not have a callsign, it is best that you leave this field

empty with the default value of "NOCALL" and do not transmit packets. To transmit, you must enter position details in the **Latitude** and **Longitude** fields (optionally altitude as well, if **Report altitude** is on). Use signed decimal notation (i.e. 38.0458 for 38° 2' 45" N) to specify location degrees, minutes and seconds. Also, select an appropriate **Symbol** for your object and if the symbol allows it, a **Symbol overlay** character or number. The number of available symbols and their types are predefined in the APRS Specification. You can also change the **Comment** text that will be appended to each packet and the **TX interval**, which defines how frequently packets will be sent. If you are not moving, the specification suggests that you select an interval of 30 minutes. PocketPacket will allow you to send packets every 30 seconds, but please do not use such a small value unless you are confident that it is necessary and you understand the implications.

In **View Options** you select the **Unit types** - whether to display values in the metric system or not, as well as the timeframe of **Visible packets**.

With the options of the **Messaging** group you can define the set of callsigns you want to receive messages for (in addition to your own - of course). These are called **Message groups** and by default include ALL, QST and CQ. Also, set **Delete all after** to the amount of time you want to keep your messages.

The **APRS-IS** section allows you to modify the APRS-IS connection details. You can manually enter the server's hostname and port or select one of the available Tier 2 servers (http://www.aprs2.net). Also adjust the distance of the **Range filter**. Your location will be applied as the center of the filter. If you wish to send packets via the APRS-IS server, enter your **Passcode**. Most servers will not accept data, unless your connection is verified using a passcode. If you do not have one, contact your closest server's administrator.

Modify PocketPacket's TNC options in the **Audio Modem** section. Select an **Audio Input** and **Audio Output** device and the method of **PTT**. If you don't **Use VOX for PTT** (automatic PTT by the transceiver), select a serial port. PocketPacket will set both RTS and DTR signals when transmitting an audio packet. When sending, you should also select a **Digipeater path**. The current specification states that you should specify digipeaters in WIDEn-n notation, where the first "n" designates the locality of the digipeater and the second the number of relay hops. A single path of WIDE2-2 is a commonly suggested for fixed stations. If moving, try WIDE1-1 and WIDE2-1, as suggested in ARRL's VHF Digital Handbook.

Credits

Code:
Antony Chazapis (SV1OAN),
Miltiadis Vasilakis
Includes "MAAttachedWindow" code by Matt Gemmell
http://mattgemmell.com
Includes "AMSerialPort" code by Andreas Mayer
http://sourceforge.net/projects/amserial

Map code and data:
The Route-Me library is copyright © 2008-2010, Route-Me Contributors.
All rights reserved. - https://github.com/mvasilak/route-me
Map tiles © OpenStreetMap contributors, CC-BY-SA
http://www.openstreetmap.org

Application icon: Antony Chazapis (SV1OAN)

APRS icons: Stephen Smith (WA8LMF) - http://wa8lmf.net/aprs

Other icons: Joseph Wain - http://glyphish.com

© 2011 Antony Chazapis

Visit our website at: http://koomasi.com
Please send us comments and suggestions at: pocketpacket@koomasi.com