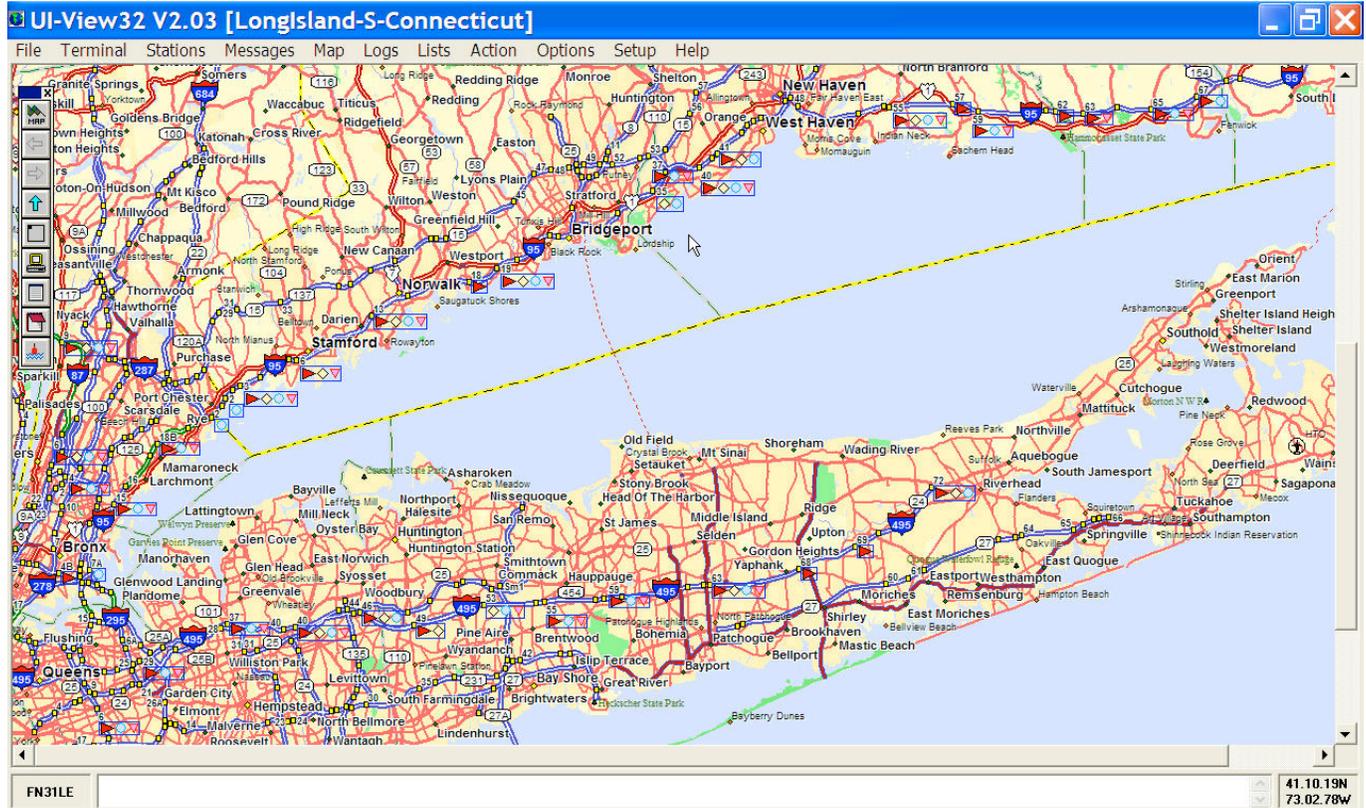
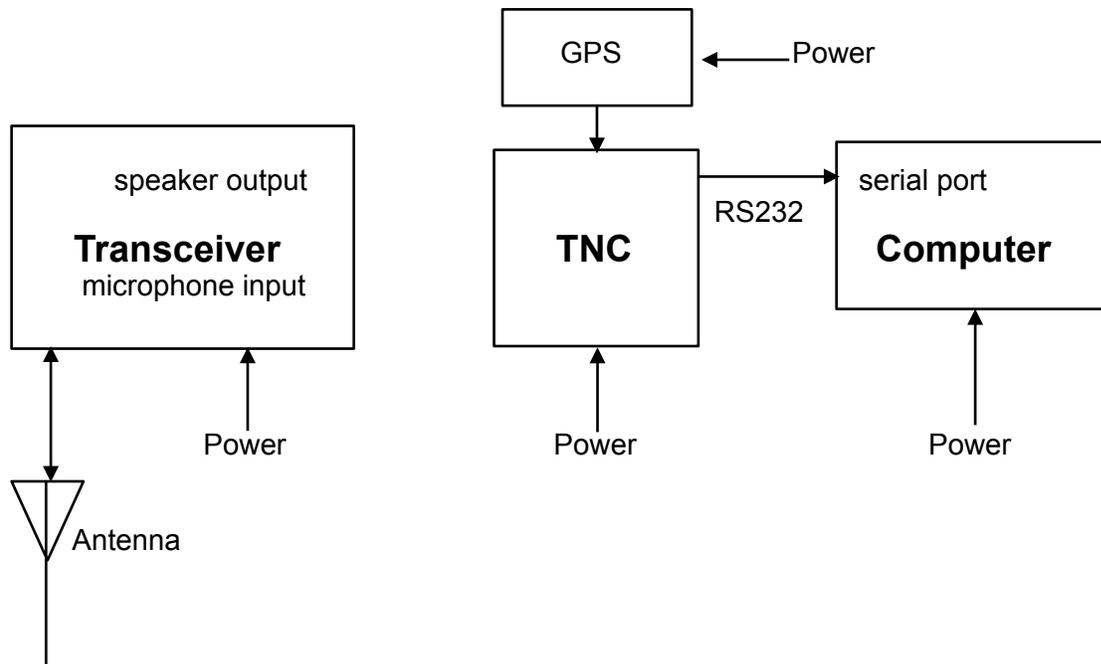


APRS UI-View 32 Setup for Digipeating and IGate

Dr. John A. Allocca, WB2LUA, www.wb2lua.com, 1/2/12



APRS Hardware Configuration



Automatic Position Reporting System (APRS) is a packet radio system used for tracking objects, people, vehicles, boats, aircraft, manned/unmanned balloons, weather systems, etc. APRS uses an Amateur Radio mode called unconnected (UI) packets.

APRS was developed by Bob Bruninga WB4APR, and was first introduced to the Amateur Radio Community at the ARRL Computer Networking Conference in New Jersey in 1992. Over the past years APRS usage has grown and expanded across the globe. Many new features and capabilities have been added since its inception. Worldwide, there are over 4000 stations on the map at any one time. There are a number of software programs that can be used to identify and track APRS stations (beacons).

Basically, APRS is a packet system with the addition of a GPS (global positioning system) receiver. Many TNC's have GPS receiver inputs. There are stand alone GPS devices, which have map displays and tracker GPS units, which do not have map displays and are less expensive. GPS coordinates can also be manually entered into an APRS system. This is often done with fixed station operation. Weather stations can be interfaced with APRS to report live and up to date weather information over an APRS network.

There are several vhf radios and handi talkies that have built in TNC's and GPS receiver inputs. These type of radios allow you to automatically transmit an APRS beacon and use voice mode without changing any settings.

The universal frequency used for APRS is 144.390 MHz.

During emergencies, APRS can be very valuable. It can be monitored at an emergency operations center to track emergency response teams, mobiles, etc. Responders in the field can also see their own location.

The Global Positioning System is maintained by the U.S. Department of Defense and consists of 25 satellites in orbit around the earth. Positioning information is determined by a small receiver which measures the time in micro-seconds that it takes to receive the broadcast from between 1-12 satellites. By receiving the signal from at least four satellites, position information down to about 10 meters can be determined. Altitude information can also be obtained from the system. In mobile situations you can determine speed and direction.

SSID's

- 0 Your primary station usually fixed and message capable
- 1 generic additional station, digi, mobile, wx, etc
- 2 generic additional station, digi, mobile, wx, etc
- 3 generic additional station, digi, mobile, wx, etc
- 4 generic additional station, digi, mobile, wx, etc
- 5 Other networks (Dstar, Iphones, Androids, Blackberry's etc)
- 6 Special activity, Satellite ops, camping or 6 meters, etc
- 7 walkie talkies, HT's or other human portable
- 8 boats, sailboats, RV's or second main mobile
- 9 Primary Mobile (usually message capable)
- 10 internet, I gates, echolink, winlink, AVRS, APRN, etc
- 11 balloons, aircraft, spacecraft, etc
- 12 APRStt, DTMF, RFID, devices, one-way trackers*, etc
- 13 Weather stations
- 14 Truckers or generally full time drivers
- 15 generic additional station, digi, mobile, wx, etc

New nN Paradigm

1. RELAY, WIDE, TRACE, TRACEN-N and SS are obsolete.
2. Use WIDE2-2 for fixed stations (3-3 is ok for areas far from any city or mountains)
3. WIDE1-1, WIDE2-1 for mobiles (WIDE1-1, WIDE2-2 is ok for areas far from any city or mountains).
4. Use WIDE1-1, SSn-N for selected non-routine State or Section nets or when humans are present for a large area emergent needs. (will not work reliably during transition period)

5. Use DIGI1,DIGI2,DIGI3... for point to point communications (but realize success becomes vanishingly small beyond 2 hops)

WARNINGS:

A. Never use WIDE1-1 beyond the first hop

B. Never use anything other than WIDEn-N on a Balloon for aircraft. (N=2 should work well)

UI-View Software

Download UI-View V2.03 from the UI-View website <http://www.ui-view.org>. There are also maps and other UI-View Add-Ons and information at this site.

UI-View requires a Registration Key which you can obtain from www.apritch.myby.co.uk Note: Registration is only available to Licensed Amateurs.

To install UI-View, run 32full203.exe and follow the prompts.

Next you will need to install maps for your area. Download maps from the UI View website or make them from Street Atlas 9. Unzip the map files and copy them into the UI-View Maps directory C:\Program Files\Peek Systems\UI-View32\Maps

Comms Setup

From the Setup Menu, select Comms setup and select the type of TNC, Comm Port, etc. as seen below. The Kantronics KPC3+ works very well for this application and for Winlink 2000.

Comms Setup

Baud Rate
 1200 2400 4800 9600
 19k2 38k4 57k6 115k2

Data Bits 7 8
Stop Bits 1 2

Parity None Odd Even

COM Port
 None 1 5
 2 6
 3 7
 4 8

Handshaking TNC type

Host mode Receive only

Station Setup

From the Setup Menu, select Station Setup and configure as seen below.

Station Setup

Callsign Latitude Longitude Locator

Unproto port Unproto address

Beacon comment UI-View Tag

Beacon interval (mins) _____

Fixed Mobile miles km Internet

Symbol Compressed Beacon

GPS symbol

APRS Server Setup

From the Setup Menu, select APRS Server and configure as seen below.

APRS Servers:

1. From the File menu, Click on "Download APRS Server List"
2. Type in: `www.aprs2.net/APRServe2.txt`
3. Click on the Download button. A list of APRS servers will be displayed.

Some Regional Servers are:

`maine.aprs2.net:14580`

`midwest.aprs2.net:14580`

`northwest.aprs2.net:14580`

`southwest.aprs2.net:14580`

or rotate between Tier2 Servers: `rotate.aprs2.net:14580`

Filter for extra long-on texts may be added as: `filter m/100`

4. Check the box for the server selected and enter the validation number that came with your registration document.

To Add a url:

1. Press the Insert key
2. Type in the url
3. Press enter

To Remove a url:

1. Click on the entry and press the delete key

APRS Server Setup

Select One Or More Servers

- rotate.aprs2.net:14580
- amsterdam.aprs2.net:14580
- aprsnz.aprs2.net:14580
- asia.aprs2.net:14580
- aunz.aprs2.net:14580
- australia.aprs2.net:14580
- austria.aprs2.net:14580

Text to send on connection

Gate RF To Internet

- Open the gateway
- Gate objects
- Insert station callsign

Gate Internet To RF

- Gate local messages
- Use reverse digi path
- Transmit IGATE status

APRS server log on required

Validation number

Enable auto reconnect

Extra log-on text

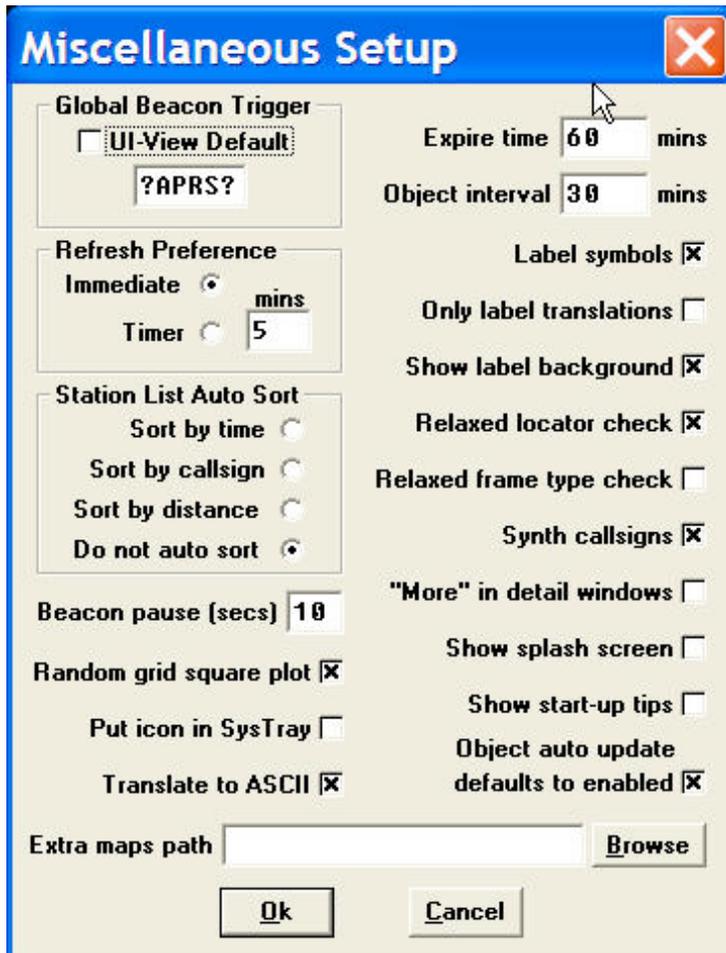
Enable local server

Max silence mins

Ok Cancel

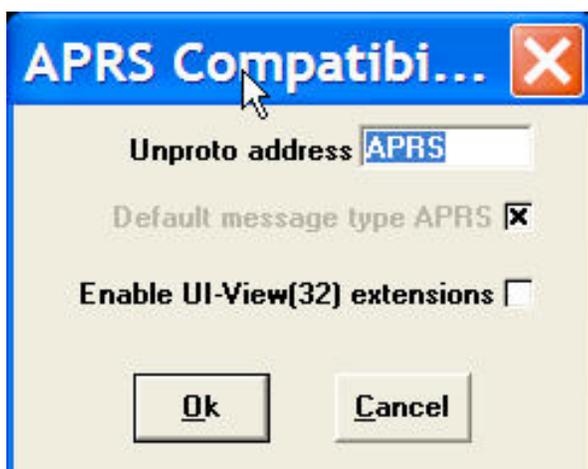
Miscellaneous Setup

From the Setup Menu, select Miscellaneous and configure as seen below.



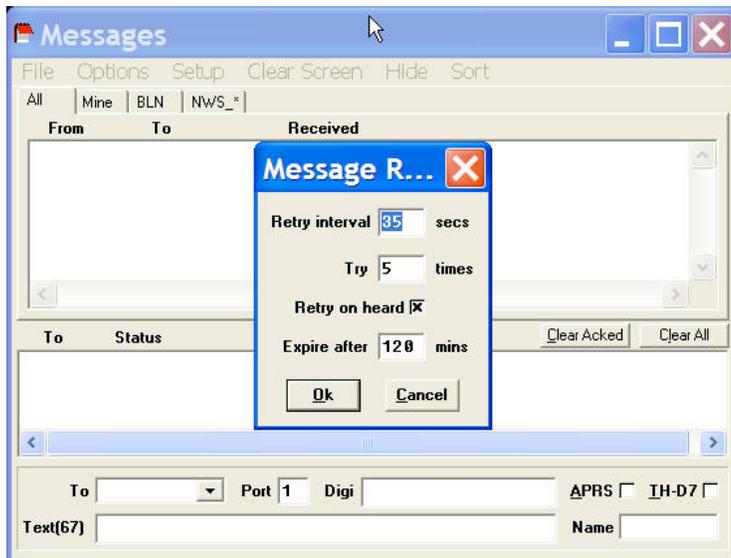
APRS Compatibility

From the Setup Menu, select APRS Compatibility and configure as seen below.



Messaging Setup

From the Message Menu, select Setup at the Message Retries dialog box. Set the *Retry interval*, *Try*, *Retry on heard* and *Expire after* as shown below.



Connecting to APRS-IS

From the Files Menu, select Schedule Editor, then New. Then, select *APRSERVE_CONNECT* from the pull down menu in the *Command* box. Type: +1 in the *Time* box. Then click Yes. Then exit. This will connect UI-View Client to APRS-IS 1 minute after it has started.

Or one can click on Connect to APRS Server from the Action menu.

