Foothills Amateur Radio Society
Relay

January 2008   Volume 38, Number 1

January – Winter Banquet

Date: Friday, January 25, 2008
Time: Socializing at 6 pm, Dinner at 7:00
Place: Michael's at Shoreline
Speaker: Martin Knutson, W0BBV
Topic: Experiences as a U-2 Pilot

About the Speaker: Martin "Marty" Knutson was a member of the initial group of six U.S. Air Force pilots hired by the CIA in 1955 for the covert U-2 program. He flew over the Soviet Union on many occasions during his service with the CIA.

In 1971, Marty joined NASA at Ames Mountain View as manager of the Airborne Instrumentation Research Project. His U-2 experience came in handy as he continued to fly this unique aircraft conducting high altitude experiments. He moved on in 1984 to become site manager of the Ames Dryden Flight Research Facility at Edward Air Force Base. He was then responsible for managing aeronautical operations on some the most advanced aircraft of the time.

From late 1990 to early 1997, Marty served as chief of flight operations at NASA Ames in Mountain View. Yes, he flew the SR-71 at over mach 3 in that year three months after he retired from NASA. Marty has received many awards over the years including the Meritorious Service Medal and the Distinguished Flying Cross from the USAF.

We plan to raffle $1500 in valuable prizes: FT-857D Yaesu HF Mobile Transceiver - 160-10 meter bands(100W), 6m(100W), 2m(50W), and 70cm(20W) bands; DM-330MVT Alinco Switching Power Supply 5-15VDC (30 Amps); MP-1 SuperAntennas MP-1 Antenna - 40-6M Portable travel antenna; FR-250-ARC Grundig FR-250-ARC - American Red Cross version of the FR250; HTSS HEIL HTSS Traveler - Single Side Headset boom microphone; plus a long list of additional prizes donated by Ham Radio Outlet.

Upcoming Events

Jan 25	FARS/PAARA Winter Banquet 2008
Feb 7	7:30 PM, Board Mtg at the Los Altos Town Crier
Feb 22	7:00 PM, Club meeting, Covington School
Mar 6	7:30 PM, Board Mtg at the Los Altos Town Crier
Mar 28	7:00 PM, Club meeting, Covington School
Apr 3	7:30 PM, Board Mtg at the Los Altos Town Crier
Thursdays	8:00 PM, FARS net, 145.230(-), 100 Hz PL

See more events, FARS Calendar <http://www.fars.k6ya.org/events/calendar>

President's Corner

FARS/PAARA Winter Banquet 2008. The banquet is set for January 25th at Michael's at Shoreline in Mountain View. We are again teaming up with PAARA to make this event the big to do that it is. We are planning to have $1,500 in prizes for the raffle, a great meal, and of course our speaker. Our speaker is Martin Knutson, W0BBV. Marty was a U-2 pilot during the cold war and later went to work for NASA where he stayed until he retired in 1997. He will talk about some of his experiences as a U-2 pilot. Mark your calendars for that date and check out the details at http://www.fars.k6ya.org/events/banquet. *Sign-ups for the Banquet need to be received no later than Monday, 21 January.* You can sign up online using Paypal, or you can mail in the sign-up form found in this Relay with payment.

Membership Renewal 2008. It is time to renew memberships for the New Year. You can renew your membership along with the sign-up for the banquet or separately. You can use Paypal or the sign-up form in this Relay.
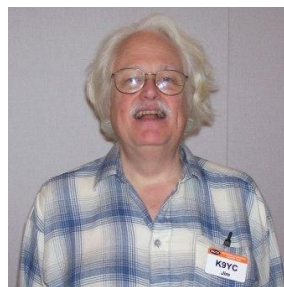
Am-Tech Day. Check the FARS web site for the program schedule, directions, and the latest news the next Amateur Radio Technology Day (www.fars.k6ya.org/amtechday/). Subscribe to the FARS Announcement list (www.fars.k6ya.org/mail/) to make sure you get an email reminder for this and other FARS activities.

On-line Roster. The membership roster is on-line, so you can update your information on-line. You can also use the on-line roster to find out how to contact other FARS members and to renew your membership (www.fars.k6ya.org/cgi-bin/r-edit). You can also renew your membership on-line via PayPal.

         - de Mikel, KN6QI

December Meeting Report

Jim Brown, K9YC, spoke about RFI and Ham Radio. Jim explained how to reduce interference in gear. The biggest cause of RFI is the "Pin 1" problem – poor grounding. He presented various sorts of chokes of varying compositions. You can find more information about this topic and some of Jim's work at the website audiosystemsgroup.com. You can email Jim at jim@audiosystemsgroup.com.

Jim Brown, K9YC   **George Chitouras, KI6HIO,**
December Speaker   **Ron Green, KG6RLG**

George Chitouras, KI6HIO, won the first place raffle prize - the Alinco DM-330MV, 5-15volt 30 amp switching power supply. Second prize, the DBJ-2 Portable dual band J-Pole Antenna, was taken by Ron Green, KG6RLG. The Wish You Were Here number for Terry Ridgeway, N6ZAG, was chosen. Unfortunately, Terry was not present to claim the prize.

FARS / PAARA 2008 Winter Banquet

Mark your calendars. The FARS / PAARA annual banquet will take place on Friday evening, January 25, 2008. FARS is again teaming up with PAARA (Palo Alto Amateur Radio Association) to put on this special Ham Radio event. By popular demand we are returning to Michael's at Shoreline:

Where:	Michael's at Shoreline
	2960 No. Shoreline Blvd
	Mountain View, CA
	650-962-1014
When:	6:00pm - Open Bar (No Host)
	7:00pm - Dinner
	8:00pm - Presentation
	9:00 pm – Announcements, Awards, Raffle

Our **speaker** is **Martin Knutson, W0BBV**. Marty was a U-2 pilot during the cold war and later went to work for NASA where he stayed until he retired in 1997. He will talk about some of his experiences as a U-2 pilot.

Note that unlike regular meetings, attendance at the banquet is by reservation only. To attend this event, fill out the Banquet Signup form in this newsletter and include payment for the appropriate amount. You can also use the Paper Signup or On-line Signup at the FARS website. You can renew your FARS membership if you have not already done so.

Raffle Prizes: We are planning to raffle $1,500 in prizes at the banquet.

Menu: We have decided on the following menu choices:

Menu Choice	Price
Roast Prime Rib of Beef	$40
Breast of Chicken Florentine	$31
Broiled Salmon Lemon Beurre Blanc	$35
Vegetarian Brochette w/Wild Rice	$27

Each entree is served with seasonal greens, fresh vegetables, potato du jour, French rolls and coffee. For dessert we have an ice cream parfait. Prices include all taxes and service.

We will have a NO HOST BAR for soft drinks, wine, beer, etc.

Don't Miss it! This is going to be a fun time for everyone, so let's make it a big turnout. See you there! For reference you might want to print out a copy of the Banquet Flyer (from the FARS website) which includes a map.

CLUB INFORMATION

President:	Mikel Lechner, KN6QI
Vice President:	Steve Stearns, K6OIK
Treasurer:	David Cooper KE6PFF
Secretary:	Rob Riley, KI6INR
Radio Officer:	Phil Hawkins, KA6MZE
Training Officer:	Kevin Weiler, K6XXX
Relay Editor:	Mark Hardy, AF6DO

FARS Board: Dick Baldwinson N6ATD, Robert Flemate KE6TFU, Pink Foster KG6ILA, Kristen McIntyre K6WX, Barbara Neuhauser AE6RM.

Station Trustee:	Stan Kuhl, K6MA
FARS Web Page:	http://www.fars.k6ya.org
Download Relay:	http://www.fars.k6ya.org/relay

Club members and non-members are encouraged to subscribe to the FARS Announcement list by browsing www.fars.k6ya.org/mail, clicking on Subscribe/Unsubscribe and following the instructions under "Subscribing to fars-announce.

You may submit announcements to the FARS Announcement at fars-announce@svpal.org. The list is moderated and messages will be posted as approved by the list moderator.

The FARS board of directors may be reached at
fars-board@svpal.org

Club meetings are held at 7 PM on the fourth Friday of each month except January (Winter Banquet); and sometimes there are changes for June (for field day) and Nov. & Dec. (for holidays).

Annual club membership is $20. Club badges are $9. Visitors are always welcome! Directions in this newsletter. Talk-in: N6NFI (145.23-, 100 Hz) or W6ASH repeater (145.27-, 100 Hz).

FARS *Relay* is the official monthly newsletter of the Foothills Amateur Radio Society. Contributions to the newsletter from members, family, and guests are earnestly solicited! Contributions are subject to editing and/or compression. All readable forms welcome.

Here is how to reach the editor:
Mark Hardy, AF6DO
Mail: 2998 Jerald Avenue
Santa Clara, CA 95051
Voice: 408-243-0701 (Before 9 PM, preferred)
Email: kg6grr@arrl.net, At FARS meetings.

Winter Banquet Raffle Prizes

$1500 in prizes will be raffled at the Winter Banquet:
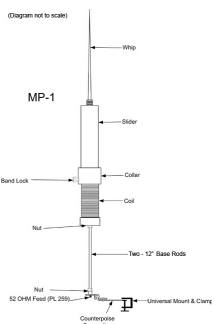
The Yaesu FT-857D, HF/VHF/UHF mobile transceiver covers 160-10 meter bands(100W), 6m(100W), 2m(50W), and 70cm(20W) bands. It has wide frequency coverage and an optional remote-head operation. The FT-857D version includes coverage of the U.S. 60-meter (5 MHz) band, plus the previously-optional DSP circuitry.

The Alinco DM-330MV Switching power supply. It has a maximum output current of 32 Amps, 30 Amps continuous. The output voltage is variable from 5 to 15 VDC with a variation of less than 2%. It has a single volt/current meter that is back-lit and weighs approximately 2 Kg.

MP-1 SuperAntennas MP-1 Antenna - 40-6M Portable travel antenna. It covers QRP to 300 watts.

FR-250-ARC Grundig FR-250-ARC - American Red Cross version of the FR250.

HTSS HEIL HTSS Traveler - Single Side Headset boom microphone.

Plus additional prizes donated by Ham Radio Outlet (Thank you to Howard and Ham Radio Outlet):

- Kill-A-Watt - Appliance AC Power Monitor
- CIG-2-OEM-5-15A - Cigarette Lighter Plug (15A)
- PS-4 - PowerPole splitter
- Bug Mount - Radio Control Head Mount
- MFJ-700C4 - Four Pack Ferrite RFI Suppression Choke
- 21st - ARRL Antenna Book
- HM-05 - BNC Male TO UHF adapter cable
- ARRL Low Power Communications book 3rd edition
- ARRL VOIP & Ham radio book
- ARRL GPS and Amateur Radio book
- ARRL Log book
- Mini-Logbook
- BT-Junior - Automatic Charger 12V Lead Acid Batteries
- SOC-PP - Powerwerx Cig Lighter to PowerPole (15A)
- PS-4-Plus - PowerPole splitter
- LoBoy Mount - Low profile radio head mount
- MFJ-701 - Snap-On-Choke for RFI suppression
- TAH-2008 - ARRL 2008 ARRL Handbook w/ cdrom
- HS-05 - SMA to PL-259 adapter cable
- Emergency Power book
- ARRL HF Digital Handbook 4th edition
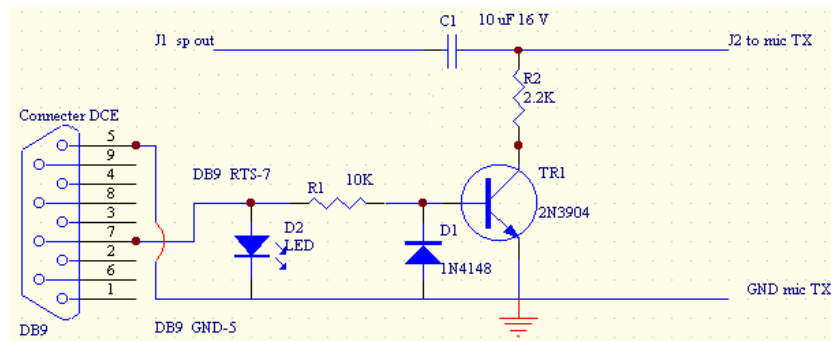- ARC-2008 - CQ Amateur Radio Calendar 2008
- DXCC Handbook

Setup AGW Packet radio modem engine with PC Sound card
Nimit – KI6JLD

If you do not have PACKET Radio Equipment but have a PC & Sound Card, you can download a Freeware AGW Packet Engine, which gives you a 1200 Bps Packet Radio via sound card. Then download UI-View and configure it to talk to AGW PE or the Packet Radio Terminal program.
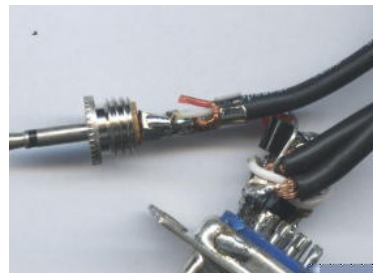
The Idea of using AGW PE came after I built the Tiny Tracker for APRS sending the Position (GPS data) over the 2 meter Band on the 144.390 MHz APRS freq. After I finished building Tiny Track, I needed to test the circuit to see whether or not it worked. The quick solution was to use the AGW PE and a simple interface from PC to HT in order to monitor and tune up the parameters of Tiny Tracker circuit.
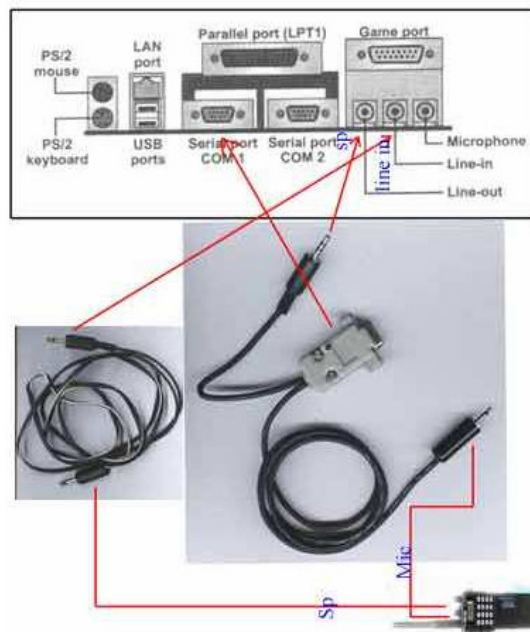
Setup the Sound card interface

I will introduce the simple schematic for those who want to build the sound card interface and may not have tome to build a more complicated circuit. This circuit uses only a few components and can fit in a DB9 case.

The TX schematic only needs the signal from Com port to send to the PTT, and the sound from PC to HT.

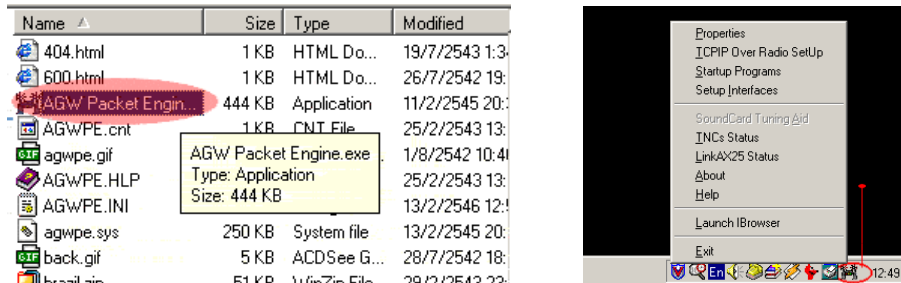The RX part of this solution is just a cable connection from HT to the line-in or MIC of PC sound card.
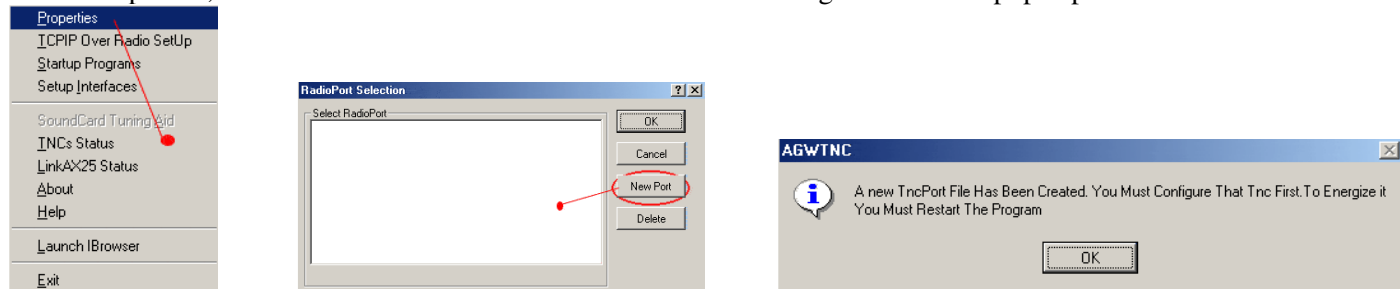
Set up the AGW Packet engine program

First you have to download the AGW Packet Engine, save the file and unzip the contents to any new folder:

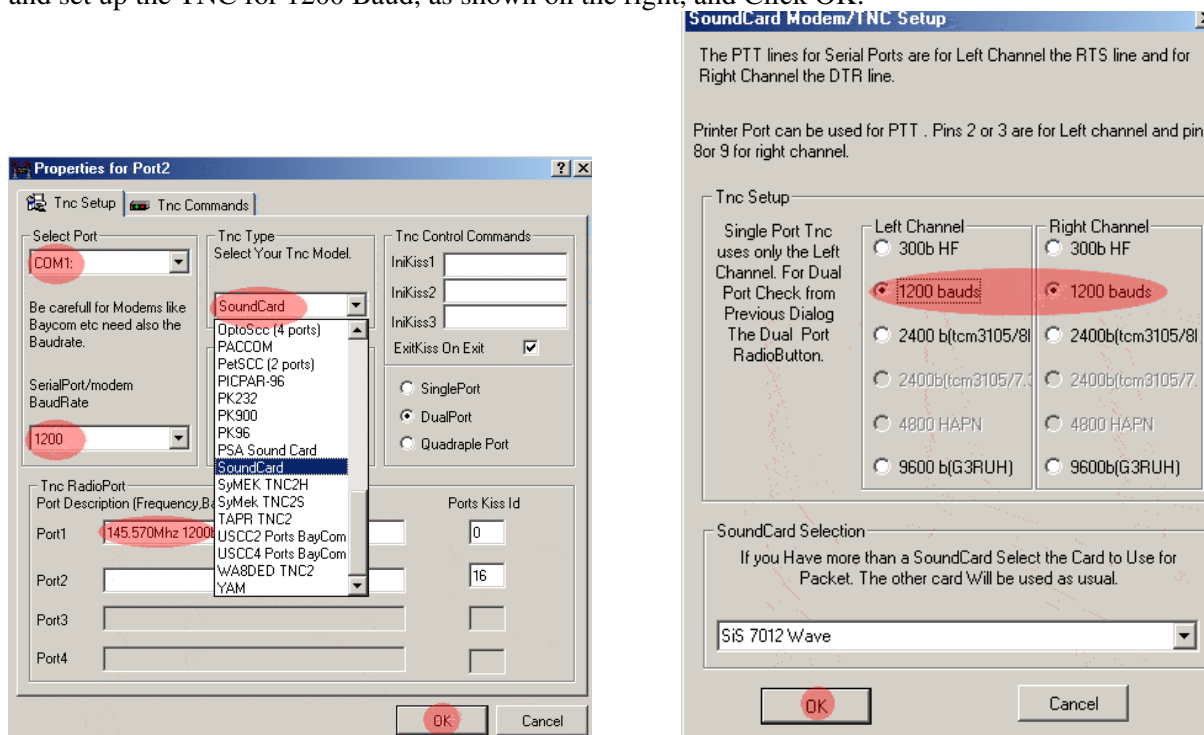| Name △	Size	Type	Modified
agwpe.zip	815 KB	WinZip File	10/2/2546 12:09
agwterm.zip	366 KB	WinZip File	10/2/2546 12:11

In the folder where you unzipped the file, double click on the AGW Packet Engine executable. After running the executable, you will see a small Icon appear on the bottom right corner of the toolbar. Click the Antenna Icon as below.
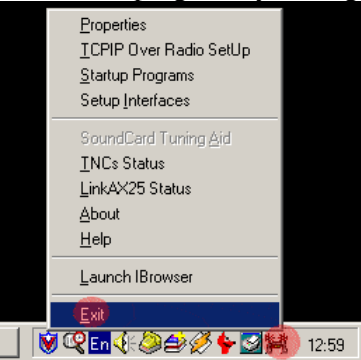
Select Properties, and then select New Port. Click OK on the warning window that pops up.

The following screen will appear, set up parameter as shown below on the left, and then click OK. Select the Sound card and set up the TNC for 1200 Baud, as shown on the right, and Click OK.

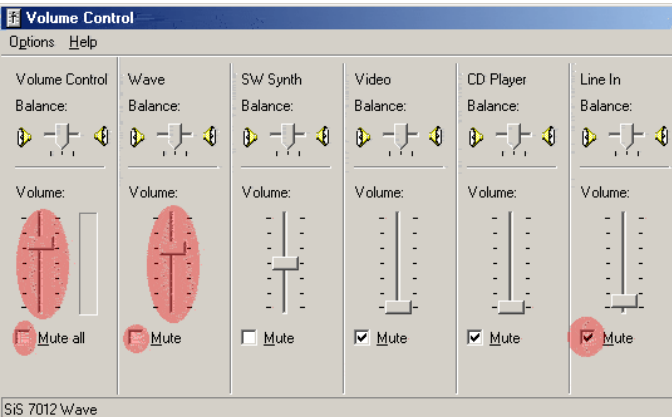Restart the program by exiting and running the AGW Packet Engine again.

After you restart the program, the ICON will appear to have small Tower

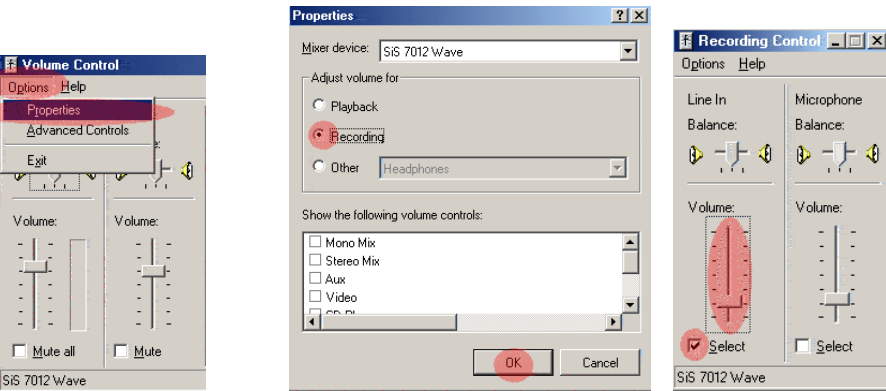The setup is most done. Now setup the sound card selection by selecting the speaker ICON.

Set up the Volume as shown.

Setup the input from HT by selecting option and properties. On the properties window, select recording.
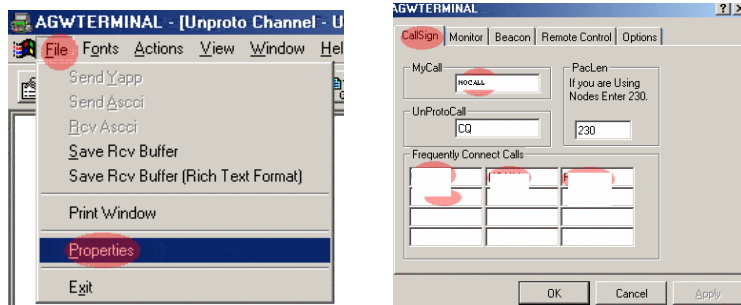

After this you will need the Terminal Program to check the communication data sent and received by AGW PE. Download AGW terminal software agwpterm.zip, and unzip agwterm.zip file.
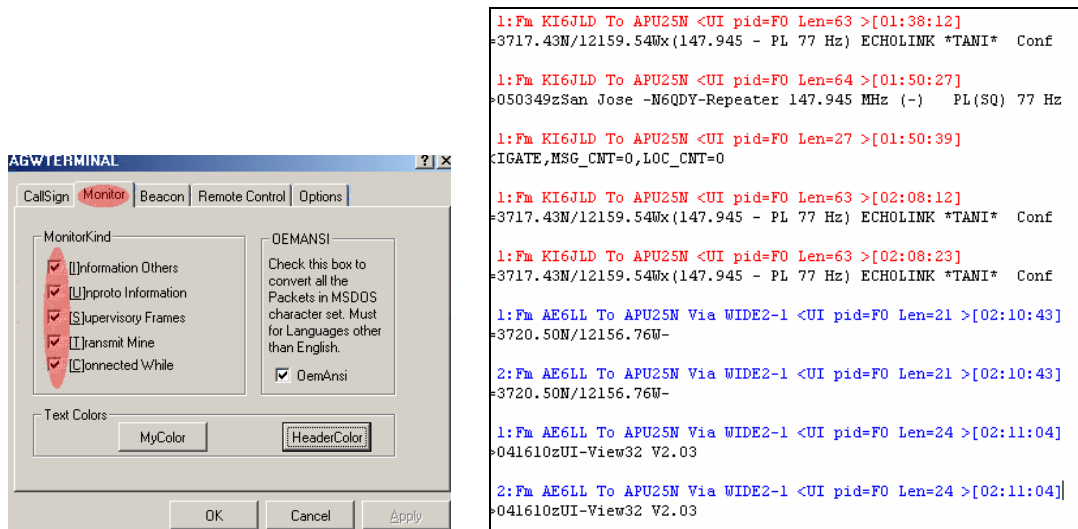
At the File menu, select Properties, and then set up the Call Sign

Then select the Monitor tab and select all of them for Monitor and then Click OK. You have to restart the program to activate all the parameters.


```
1:Fm KI6JLD To APU25N <UI pid=F0 Len=63 >[01:38:12]
=3717.43N/12159.54Wx(147.945 - PL 77 Hz) ECHOLINK *TANI*  Conf

1:Fm KI6JLD To APU25N <UI pid=F0 Len=64 >[01:50:27]
>050349zSan Jose -N6QDY-Repeater 147.945 MHz (-)   PL(SQ) 77 Hz

1:Fm KI6JLD To APU25N <UI pid=F0 Len=27 >[01:50:39]
<IGATE,MSG_CNT=0,LOC_CNT=0

1:Fm KI6JLD To APU25N <UI pid=F0 Len=63 >[02:08:12]
=3717.43N/12159.54Wx(147.945 - PL 77 Hz) ECHOLINK *TANI*  Conf

1:Fm KI6JLD To APU25N <UI pid=F0 Len=63 >[02:08:23]
=3717.43N/12159.54Wx(147.945 - PL 77 Hz) ECHOLINK *TANI*  Conf

1:Fm AE6LL To APU25N Via WIDE2-1 <UI pid=F0 Len=21 >[02:10:43]
=3720.50N/12156.76W-

2:Fm AE6LL To APU25N Via WIDE2-1 <UI pid=F0 Len=21 >[02:10:43]
=3720.50N/12156.76W-

1:Fm AE6LL To APU25N Via WIDE2-1 <UI pid=F0 Len=24 >[02:11:04]
>041610zUI-View32 V2.03

2:Fm AE6LL To APU25N Via WIDE2-1 <UI pid=F0 Len=24 >[02:11:04]
>041610zUI-View32 V2.03
```

Here is some of simple data that appeared on the screen after restarting the program and listening on APRS 144.390 MHz

Below is my Tiny Tracker with GPS and Transceiver in one pack

Tiny Track PIC 16F84

With Trimble GPS board

My 1st Tiny Track on the Chevy on the TRIP to Tahoe

Installed with Yaesu FT-411 HT

TRMBLE GPS Cost $20 from EBAY

I will write about how to build and configure Tiny Track next time.

Nimit Hongyim, KI6JLD

The New Joys of Digital Radio
From Dave Flack,

In almost 50 years as a ham I've tried many communication modes including cw, AM, SSB, RTTY, packet, APRS and the newer 'sound card' modes like SSTV and PSK31. Some of the digital modes we now hear on HF have exotic names like Olivia, DominoEX, Hellschreiber and Throb. As with PSK, each of them uses the same rig-to-computer-soundcard hardware interface. Each also requires a software program to modulate and demodulate the signal, although several programs handle multiple modes. (For excellent explanations of modes like Hellschreiber try http://en.wikipedia.org/)

Why so many choices and what are they good for? Just as PSK is an improvement over RTTY in terms of bandwidth, readability, and reliability, each digital mode was created because someone believed it would do something especially well or better than an alternative. In other words, digital modes let us try new ways to communicate and explore opportunities to experiment and expand our knowledge.

One evening I was working K6SID across the bay in Alameda on 80 meters using PSK31. Howard has an ICOM 703 qrp rig running 10 watts to a stealth antenna he had just put up to get back on HF. In other words he was running very low power to an inefficient antenna and yet on PSK I was printing him 80%. I told him of my interest in other modes and we started trying them. We started with DominoEX and then went to Olivia. Each time we tried several data speeds and bandwidths. We soon discovered that each time the printing was nearly 100%, in other words superior to PSK31.

So if these newly improved digital modes are so great, why don't we see more people using them? Each of these modes has its proponents and detractors—think AM vs. SSB, AMTOR vs. PACTOR, RTTY vs. PSK31 etc. Over time the newer, superior technologies usually win out in terms of popularity. This takes time for several reasons. First, today we aren't dealing with single alternatives but a very large number of options. Add to this the difficulty—or near impossibility—of knowing by ear what mode you are receiving and it's easy to stick with RTTY's familiar song or the narrow line of PSK31 on your digital software's waterfall.

One of the things I enjoy most about ham radio is that every time there is a technological problem one of us jumps in to provide her or his assistance. For example, there are six common forms of DominoEX and eight of Olivia. Even if you have worked these modes many times it can be nearly impossible to 'guess' what is being sent. The answer comes from what is called RS/ID and RS/ID detection. The freely distributed 'MultiPSK' software implements RS/ID to provide automatic recognition of any mode anywhere in the band and then locks in the correct transmit frequency! Now we just need more software that provides RS/ID.

If you don't have RS/ID detection software you can always start with PSK31 or RTTY and then ask the other station to switch. This has been my most successful way of trying the new modes. When our PSK signals dipped into the noise Gary, W7FSI, in Stanley, Idaho, and I were able to keep our QSO going for quite a bit longer on 80 meters. Nor do you need a PC to work the digital modes. There is Mac digital software, though it offers much more limited mode choices. Recently, Bill, VE7NBQ, in Vancouver, B.C., gave me my first MFSK16 contact using his Mac. Again we went from PSK to MFSK16 when our signals faded from QSB. MFSK16 provided 100% solid copy.

In the end, the biggest limitation to the new digital modes isn't what kind of computer or software you have but what you are willing to try. Right after my MFSK16 contact I dropped down to 160 meter where I had been working to make a contact using PSK31 for months. Up the band I heard a RTTY station calling CQ and returned his call. In all my years as a ham I had never tried RTTY! We had a nice chat and he told me he had worked over 50,000 RTTY contacts. I asked him if he had ever heard or tried any other digital modes on 160 and he said no that, "RTTY worked just fine for him."

If you have limited HF resources, including low power and antenna restrictions, I urge you to try the new digital modes. You'll meet new friends while you expand your technical understanding.

Digital Resources

MFSK Technology
A great introduction to MFSK technology appeared in the February 2001 QST, www.arrl.org/tis/info/pdf/0101033.pdf

Multiple Mode Software (I have omitted the predominately PSK/RTTY software of which there are many programs.)
MultiPSK is both the most complete and complex of the digital software. There is a free and paid version. You can download it from f6cte.free.fr/index_anglais.htm.
DM780 is digital software designed to work in conjunction with Ham Radio Deluxe, a complete rig control system. However it also works as a standalone program. DM780 has a much easier to use interface than MultiPSK in my opinion and its logging program is very sophisticated. However it currently lacks RS/ID and some of the more exotic modes/configurations.

Multimode for the Mac is the most complete I could find: www.blackcatsystems.com/software/multimode.html. It is available in free and paid versions.

News Groups

I rely heavily on Yahoo news groups for help with most questions, both through searching message archives or just posting. Here are a few of the ones I use:

Digital Radio News Group
groups.yahoo.com/group/digitalradio/?yguid=166697396
Fairly technical but will happily offer advice to newbies
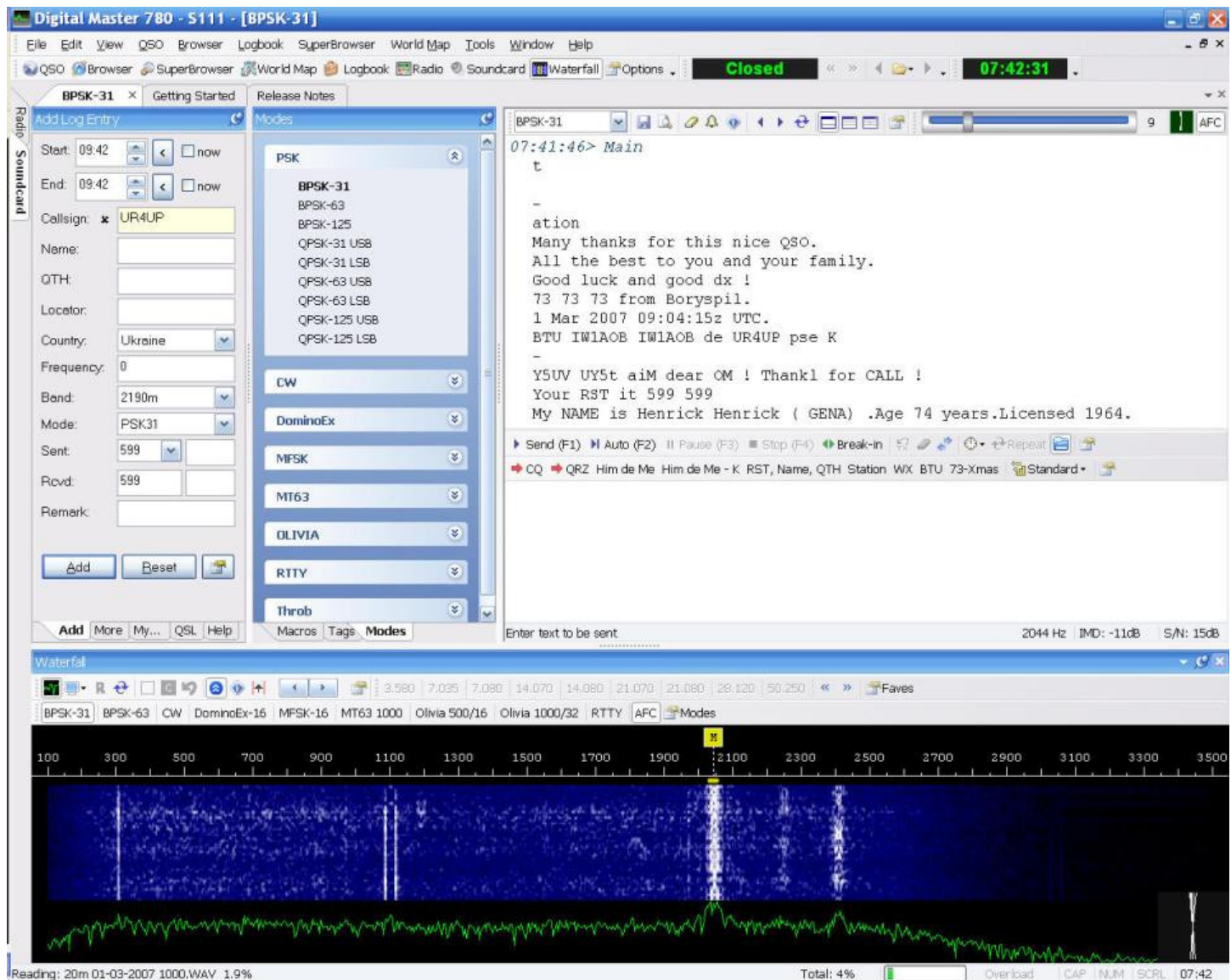
Multipsk News Group
groups.yahoo.com/group/multipsk/?yguid=166697396
This Group was formed for users of the Software suite, Multipsk, Developed by Patrick Lindecker F6CTE.

Ham Radio Deluxe
hrd.ham-radio.ch/
HRD has its own bulletin board to support its users and developers. You can also download from this site. The software is free. I donated to the site and would have paid for this software, it's that good.

DM780 from Ham Radio Deluxe provides most of the popular digital modes It incorporates a sophisticated logging feature with a tabbed-browser interface that is easy to use

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FARS 2008 MEMBERSHIP RENEWAL FORM      Date: _____
PLEASE fill out the form for all new/renewal memberships.

Name(s) & Callsign(s) & Class (E-A-G-T-N-None): _____

_____

Mailing Address: _____

_____

Home phone: _____  Work phone: _____

Fax (H or W?) _____  Packet BBS Address: _____

E-mail: _____  ARRL Exp Date(s): _____

Preferred modes: (e.g. HF-SSB/VHF/QRP/Other): _____

I'm willing to Elmer new hams with: _____

_____

Special topics of interest / suggestions for club meeting speakers:

_____
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Dues: $20 per year, new members add $9 for badge fee. **Please note:** Membership runs from January 1 to December 31.

FARS/PAARA 2008 WINTER BANQUET SIGNUP (January 25, 2008 at Michael's at Shoreline)
Deadline for signups for the banquet is January 21, 2008.

```
Name & Call                              Meal Choice      Amount

You    _____   _____    _____

Email  _____

Guest1 _____   _____    _____

Guest2 _____   _____    _____

Guest3 _____   _____    _____

Guest4 _____   _____    _____

                                         Total      _____
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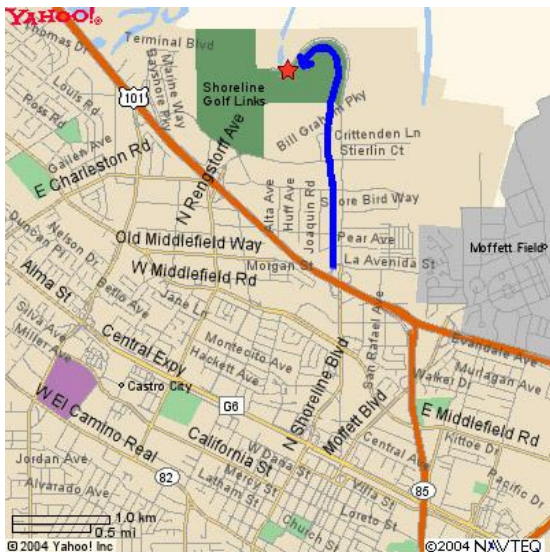
This form may be used for membership renewal, banquet signup or both.

Send your check payable to FARS, to:

David A. Cooper
PMB 41
270 Redwood Shores Parkway
Redwood City, CA 94065-1173

Choice	Menu Description	Price
Beef	Roast Prime Rib of Beef	$ 40
Chicken	Breast of Chicken, Florentine	$ 31
Fish	Broiled Salmon, Lemon Beurre Blanc	$ 35
Veg	Vegetarian Brochette w/ Wild Rice	$ 27

Directions

The easiest way to find Michael's is to take highway 101 to Mountain View. Exit onto Shoreline Blvd. (aka Stierlin Road) north (towards the bay). Follow for about 1 mile until you reach the gate for Shoreline Park. Alternatively, you can exit onto Amphitheatre Parkway from 101 and follow it north/east (towards the bay) to Shoreline Blvd. Turn left (north) onto Shoreline and follow until you reach the gate for Shoreline Park.

Enter the park through the gate, which will be open. Follow the road (~3/4 mi.) in a wide left curve around the park. Look for a sign pointing left for Michael's. Take a left turn and enter the Parking lot. The building next to the parking lot is Michael's.

TALK-IN via the [N6NFI](#) (145.230-; 100Hz PL) repeater or the [W6ASH](#) 145.27- (100Hz PL) repeater.

FARS RELAY 1/08

FARS/PAARA Winter Banquet
FRIDAY 25 January 2008
Michael's at Shoreline