



**The Carolina DX Association**

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WB4BXW	Wayne Setzer	Webmaster
K8YC	John Scott	Editor

# The Pileup

## Newsletter of the CDXA

### 2008 ARRL DX Contest Wrap Up "CDXA Continues Improving"

By Dick Williams, W3OA

CDXA continued its record of improving performance in the ARRL DX contest. The table below summarizes our scores in 2006, 2007, and 2008 and shows where we ranked in the Medium Category of the Club Competition.

<u>Year</u>	<u>Number of Logs</u>	<u>Total Claimed Score</u>	<u>Rank</u>
2006	21	3,218,723	18
2007	30	8,874,906	9
2008	40	11,843,858	??

These numbers alone indicate we should move up in the rankings this year. And, all the operators I talked to agree that propagation was awful this year – both CW and phone weekends. So maybe our competitors' scores will go down this year. More reason for optimism. We'll know when the October QST comes out.

CDXA members competed among themselves for first place prizes in seven categories. Each received a \$50 Outback Steak House gift card and a CDXA certificate. The winners were:

- Top Combined Score: **AA4S**, Ron, 1,594,782 points.
- Top CW Score: **N4ZC**, Roger, 833,280 points
- Top Phone Score: **N4PQX**, Bob, 479,886 points
- Top CW, low power, Score: **WA4DOU**, Roy, 461,988 points
- Top Phone, Low Power, Score: **K4GHS**, Ben, 173,045 points
- Top DXpedition Score: **KH6/AA4V**, Steve, 167,613 points
- Top Multi-Op Score: **W3GQ**, Paul and team member, Cliff (**W3ZL**), 1,981,737 points

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<b>CDXA PacketCluster &amp; Other Communication Systems</b>		
W4DXA (11 mi. NE of Mooresville)	144.93 MHz (1200 bits/second)	441.00 MHz (9600 bits/second)
K4MD Charlotte, NC	144.91 MHz (1200 bits/second)	Not Available on 9600 bits/second
NG4DX (Digi near Galax, VA)	144.95 MHz (1200 bits/second) Connect to NG4DX, then type "C W4DXA"	
K4MD (AR Cluster via Telnet)	k4md.no-ip.com	
CDXA Repeater 147.18 MHz (+600 )	W4DXA, Near Fort Mill, SC	
Echolink Interconnect to CDXA Rptr.	Login to K4DXA -R	
World Wide Web Homepage	www.cdxa.org	
Wednesday Luncheon (11:30 AM)	Murphy's Food and Spirits, 131 E. Woodlawn Road, Charlotte, NC	

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Members who completed 1000 or more QSOs combined, CW and phone, received a \$25 Outback Steak House gift card and a CDXA certificate. The winners in this category were:

**N2TU**, Lou **W3OA**, Dick **W3ZL**, Cliff

Members who completed 500 or more QSOs combined, CW and phone, received a CDXA certificate and a CDXA patch. There were five winners in this category:

**AD4IE**, Paul **K4DGJ**, Sam **N4AA**, Carl  
**W7DO**, Gary **WA2EMF**, Bob

Members who completed 250 or more QSOs combined, CW and phone, received a CDXA patch. There were nine winners in this category:

**KI4MF**, Harold **KI4TZ**, Joe **N1GC**, Gary  
**N4UFP**, Marc **W4LM**, Larry **W4UNP**, Bill  
**W4WNT**, Bill **W4ZV**, Bill **WA3GNW**, Bruce

This is the last intraclub competition until CQ World Wide next October and November. Now is a good time to start improving your station for the next contest season.

### Who are those guys, again?

Remember that picture from yesteryear in last month's *Pileup* with Scott Douglass, Don Daso, Roger Burt, and Ron Bailey pictured? One of those pictured put the date of that photo opportunity as being about 1992.

Shortly after publication, a definitive statement of the actual date came to me from one of the participants, Don Daso (K4ZA). Don states that the year was 1986.

#### The Pileup

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Published monthly 10 times per year, excluding the months of June and December.

The purpose of the association is to secure for the members the pleasures and benefits of the association of persons having a common interest in Amateur Radio.

Members of the CDXA shall adhere to "The Amateur's Code" as published from time to time in *The ARRL Handbook for Radio Amateurs*, and shall consist of those valid licensed amateur operators having an interest in promoting amateur radio. Long distance communications (DX) is of special interest to members of the association, but said interest is not a requirement of membership.

Dues are \$30 per year for those using the PacketCluster maintained by the Association, \$15 otherwise, payable each December. Dues are payable by check to the Secretary/Treasurer:

Cliff Wagoner, W3ZL  
P. O. Box 577  
Davidson, NC 28036

Address, telephone, and email address changes should be directed to the Secretary/Treasurer at the above address or via email at: jcw53@cornell.edu.

In that year, the fearless foursome pictured captured the Field Day trophy in category 2E. So, knowing that these four have been contesting ever since, a little arithmetic allows us to compute that they've added 88 years of cumulative experience to their resumes since then. They were darn good contesters then and only got better with time!!

### VHF Mountaintoppers Excel Again

The AA4ZZ team made another fine showing in the ARRL September VHF Contest. A recent posting on the ARRL website has AA4ZZ listed as third nationally in the Limited Multioperator Class. The operators for this event were: AA4S, AA4SC, AA4ZZ, K4DXA, KU4V, W4GRW, and W4WJF. This team has in recent years taken first, second, and now third place nationally in VHF contests.

Here's a rundown on the top 5 scores in the latest contest:

CALLS-SIGN	SCORE	QSO'S	MULTS	CLUB
W3SO	277,440	1,059	204	PVRC
W4IY	256,896	1,078	192	Wood-bridge Wireless
<b>AA4ZZ</b>	<b>217,772</b>	<b>832</b>	<b>206</b>	<b>CDXA</b>
K8EP	209,944	1,003	161	Eastern Panhandle ARC
W1QK	112,359	732	129	North-east Weak Signal Group

An interesting observation is that the AA4ZZ team had the highest multiplier total of any of the top five teams. This is an indication that the operating site has a good "reach". It is a well known difficulty that the farther away from the Northeast Metroplex a station is, the harder it is to develop a high QSO count because of the reduced population density. So, when operating from near Boone, NC the mandate is to "dig 'em out". The AA4ZZ team is always thankful for all the CDXAers who take the time to give them QSOs on a contest weekend. All of us in CDXA thank the AA4ZZ team for holding the CDXA banner high in contest efforts. Congratulations!!

## Close Call. . .

*(Your editor received this note and picture from our President upon return from a recent trip. —The Editor)*

Darn near had a wreck on I-40 trying to stop and get the picture shown below, but here it is. The billboard is on the right-hand-side of I-40 driving west between Knoxville and Nashville.



## Welcome New Members

Carolina DX Association welcomes several new members this month. **David Pedersen, N7BHC**, was the first new name to hit the roster this month. Dave lives in Indian Trail, NC. We've seen Dave at the luncheons a few times in recent months, and all are pleased that he's now joined us. From those he has lingered with at our luncheons, it appears that Dave's first love is VHF/UHF.

**Wayne Carroll, W4MPY** a.k.a. "The QSL Mar®" has rejoined us from Monetta, SC. It has been a few years since we've seen Wayne's name on our roster, and we're glad to see him back. Wayne is an avid DXer, and according to QRZ.COM he needs only P5 to have them all on CW and BS7 (yes, he missed BS7 when he 'let the smoke out' of his linear) to have them all in the mixed category.

Also swelling our ranks in the past month is **Clinton Hasty, W4CH**, from Emerald Isle, NC. Clinton arrived in North Carolina from Kentucky more than 40 years ago. It is understandable that he's a basketball fan—cheering for the Duke Blue Devils *and* the Kentucky Wildcats! While living here, NASCAR has gotten into his blood—no surprise there.

The Charlotte Hamfest resulted in even more new names on the roster:

**David Bower, K4PZT**, joins us from Knoxville, Tennessee. David is one of the now-famous "Tennessee 8" who've made the trek to the Charlotte Hamfest an annual affair. **John Chmielewski, N2XD**, came in from Lugoff, SC to check out the Hamfest, found CDXA and is now a member. From Cooleemee, NC, **John Dwiggins, N4QVM**, added a new city name to the CDXA roster. Finally, **Marks Ryan, KI4UEW**, from right around the corner in Charlotte is now on the roster. To all of you, welcome to CDXA.

## Ten and Twenty Years Ago. . . .

*(Taken from the PILEUP archives on our website.)*

Twenty Years Ago:

Just to show how far we've come. . . "Early users of the PacketCluster system got a first taste of the true potential of the system on the evening of March 9, 1988, when we stayed connected to the Atlanta group's PacketCluster node for most of the evening. Whenever a DXer in the Atlanta area entered a DX activity report, it popped up on our screens within a minute or two of the report being entered in Atlanta." . . . Believe it or not, CDXA was looking for color photos of everyone's shack for the Charlotte Hamfest. . . Same old, same old story: A "spoofer" question was being proposed for the Amateur Radio licensing exam: "When operating International Morse Code or CW, what do the letters "UP" stand for?" Proposed multiple-choice answers were:

1. Look up at the ceiling.
2. A greeting often followed by the word "yours".
3. You are listening to a United Press Bulletin.
4. Call me on a higher frequency.

Ten Years Ago:

President Joe Simpkins' welcome message in the *Pileup* indicated that this publication was now for the first time available as an on-line edition as well as a hard-copy edition. . . In an editorial, then editor Don Daso was lamenting that the Hamfest was scheduled on the same day as the ARRL DX Contest, mentioning something about the US President and a person named Monica and reminding us that the movie "Titanic" was the current rage—my goodness has it really been 10 years since all that was happening???? . . . CDXA's digipeater on Young Mountain was interfering with a nearby repeater on the same tower. We were asked to relocate our antenna to a different tower. The "final fix" was the installation of a new 7/8" heliax feedline in July, 2000 which is in operation to this day.

## NCQP—Inheritance from Murphy!????

By John Scott, K8YC

A little over a year ago, we began taking our luncheon trade to Murphy's restaurant. There has often been found to be an ignominious connection between things technical and the name "Murphy". Since our lunches began at Murphy's that connection had not been realized—until this year's North Carolina QSO Party came along, that is. Allow me to explain.

In the past four years, CDXA has operated in the NC QSO Party from the radio room in Discovery Place. In the first three of those years, we won the club competition operating from there. It is a wonderful experience to operate from Discovery Place because we get to contest *and* explain radiosport to the visitors to the science center.

Each of the past years we've always gone to the radio room before the event to ensure that our contesting software interfaced successfully with the radio for both rig control and CW keying. These prove-outs of our setup had never taken more than two hours to accomplish. We knew that Murphy was lurking this year when Dick Williams, W3OA came to Discovery Place in late January and we could not get our USB-to-serial interface cable to operate correctly. This was the same cable that worked flawlessly in 2007. Dick showed up a second time at Discovery Place on one of my volunteer days in the radio room for yet another try. On this visit the problem seemed to be residing in the software which was not supporting the USB interface properly. We changed back to the software that had worked the year before and the third trip was a charm. All the function keys were set up with the desired contest exchange and we were ready to roll.

The big day, February 24, arrived soon enough, and the first team of operators arrived at Discovery Place at 11:40AM to set up for the Noon start time of the contest. Apparently Murphy had slipped into the laptop during one of our lunches at his restaurant. After connecting the laptop to the radio, we found that we could key CW, but the rig control was now inoperative. This was the same setup which had worked flawlessly two weeks earlier. Well, not to worry, that would not affect operations too badly. We just wouldn't have the precise frequency used for each contact, and we'd have to manually change the band in the software instead of relying on the software to track the radio.

We started with about an hour of SSB work by Bill Fisher (W4GRW) and Bill's friend Randy, AA4ZR.

Then Cliff Wagoner (W3ZL) began running on CW. In moving the laptop to improve the operating setup for Cliff, the CW keying somehow became disabled. Cliff immediately started manually logging calls and using the manual paddles while Dick Williams logged calls into the logging software. In between calls, Dick was able to discern that the drivers for the USB-to-serial device had become corrupted. Yours truly had left the driver CD at home never dreaming that it would be needed after the initial load. A call to my XYL resulted in the CD being delivered downtown, and we were back in business. Surely, we had beat Murphy down.

We'd gleaned from some comments that we weren't "hearing well". A quick check of the rig showed that one of the radio room operators from the previous day had backed off the RF Gain significantly! We probably lost a number of QSOs by not hearing them. Darn that guy Murphy. We had a second CW operator coming in to bring us home in the late evening going, so we felt we had Murphy on the run at last.

For the uninitiated, Murphy's Rule states, "If something can go wrong, it will." When the phone rang in the radio room at about 3:30PM, we had no idea that old man Murphy was about to strike yet another blow. Our second CW operator reported that influenza had ravaged both him and his family during the past 24 hours, and despite his best intentions to show up, he had not been able to keep food on his stomach. BANG went Murphy's final blow. It was just Dick and me to "bring it home", and neither of us are expert at "running" well on CW.

We did our best in rounding up SSB QSOs, and did some CW search and pounce to grab a few county multipliers in the late going, but our effort only netted a score of little more than 73,000 points. We also learned later that our rig had still not been "hearing" well throughout the contest. Murphy again? On Tuesday, our prime competition from 2007, W4UNC, weighed in with a claimed score of over 94,000 points, so there was no joy in Charlotte on February 26. Further checking showed W4UNC to be operating from the QTH of N1LN in Chapel Hill. N1LN, an experienced contester, has recently put up three towers, so the gauntlet has been thrown down for 2009.

In 2009, the radio room at Discovery Place will be closed for renovations to the entire museum. We'll have to find another venue, far from Murphy this time, line up a cadre of CW operators and reclaim our title. Any ideas? (And please don't tell Murphy where we'll be!)

## New ARC EmComm Vehicle in Town

American Red Cross contracted to have about 14 vehicles built to support emergency communications. These vehicles are strategically located across the United States and one is positioned in Charlotte, NC. CDXA's Ken Boyd, K4DXA, is one of the operator/drivers trained in the use of the new vehicles. Ken successfully completed ARRL's three course sequence in Emergency Communications as well as required courses (e.g., CPR, Emergency Management) mandated by the American Red Cross to qualify as a driver/operator.

Ken arranged to bring the vehicle to a luncheon at Murphy's a few weeks back. This is the same vehicle that was displayed across the aisle from CDXA at the recent Charlotte Hamfest. Below are a few photos of the nicely equipped vehicle.



**Even the driver has a well-equipped workstation. Numerous hand-helds are packed in equipment boxes stowed in the cargo space.**



**The operator's position and external antennas show this to be a well-equipped vehicle.**



## Frequency Coordination—NFL Style

*(The information in this article was extracted from a January 28, 2008 article entitled, "Mobility Dominates Super Bowl" in Network World Magazine.—The Editor)*

If you've ever been involved in frequency coordination efforts for repeaters, you'll recognize that it takes a steady hand. Perhaps you never thought about it, but the days of hard-wired communications on the football sidelines between coaches and spotters in the press box are long gone. Observing the "Motorola" logo on all the headsets of NFL coaches should have been a clue.

For Super Bowl XLII in Glendale, AZ forty-five (yes, that is 45!) frequency coordinators suited up to retain order at the event and to organize the use of some 10,000 wireless devices.

The first frequency coordination took place at the 1996 Super Bowl XXX. It was pretty simple to organize the few frequencies in use then, but within three years, the program was expanded to nearly all NFL games in order to keep radio interference free from quarterbacks to cleaners in the stadium.

Signs are now posted in most NFL stadiums warning against use of RF devices. The warning is that operating radio transmitters on the property is a privilege, not a right, and that interference with authorized users could result in equipment confiscation and eviction from the

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stadium. Frequency coordinators seldom must exercise the power, however, since it is in everybody's interest to be granted a clear frequency and be guaranteed that nobody else will be using it.

NFL's frequency coordinators for the big games use a sophisticated database program running on a laptop to track frequencies available at a given location, which ones have been assigned, the TV-station frequency assignments in the area and the static assignments in use by such stadium services as housekeeping, and security. For the Super Bowl, the activity is put on a server to ensure more horsepower, redundancy, and to permit real-time updates to more than half a dozen laptops scattered around the stadium.

In a normal regular season game, 400 to 500 frequencies are coordinated by NFL frequency coordinators—many of whom are amateur radio operators. At the Super Bowl, the number of coordinated frequencies goes up to 2,000 and the number of devices goes to over 10,000.

The NFL has recently made some significant investments in spectrum analyzers, pocket frequency scanners, two-way radios, and radio direction finders to locate scofflaws.

Frequency users are required to coordinate with the NFL before the game to get a frequency assignment. Offenders are given the moniker, "CoordNots". First time offenders can have their wireless gear confiscated, to be returned at the end of the game, but can keep working using a wired connection. Repeat offenders have been ordered to pack up and leave the stadium!!!

Those requesting frequencies for game day are asked to give details about the equipment they'll be using and which frequencies it will be tuned to. Sometimes equipment has limited frequency flexibility. If that frequency has already been assigned, the Game Day Frequency Coordinator plays the "shell game" to try to make sure everyone gets a frequency they can use.

Once the games begin, the frequency coordinators monitor frequencies and field complaints. One of the coordinators states, "People don't understand RF. If their gear stops working, they assume they're being interfered with. But usually, it's just the batteries are run down, or an antenna has been disconnected." Nothing new there as we hams know!!

## Amateur Innovation—CW Skimmer

By John Scott, K8YC

Over the years a lot of innovation has been brought forth by the amateur radio community. A few that immediately come to mind are packet radio, APRS, PSK31, Contesting Software (e.g. CT and NA), and Echolink. Amateur radio has also had a role in fundamental technologies such as spread spectrum technologies and software defined radios. At lunch on March 5, N4ZC came up to me and asked I knew about CW Skimmer. I didn't.

Roger then gave me a quick rundown on this new technology which has created quite a technology stir as well as a lot of commentary from the contesting community. What's it all about? CW Skimmer is software written by Alex Shovkoplyas, VE3NEA. You can learn about Alex's software and CW Skimmer at <http://www.dxatlas.com>. There is also an interesting article written by Pete Smith from PVRC:

[www.pvrc.org/~n4zr/Articles/Skimmer.pdf](http://www.pvrc.org/~n4zr/Articles/Skimmer.pdf)

What is it? Conceptually, think of a broadband radio that can listen to an entire CW band. Then consider what the DSP processor does on your soundcard on your PC when you use DigiPan to decode a 3kHz segment of the popular PSK31 band—except expand that concept using some software to listen to the entire CW band and having that same software decode ALL the CW signals and their associated callsigns in real time!

The same "vertical waterfall" technology used in DigiPan is turned to a "horizontal waterfall" displaying the dits and dahs of a CW signal from left to right, and spreading the band, frequency wise, using the vertical dimension of your computer screen. Best of all, along the right side of your screen is the decoded callsign of the signal you are seeing on the waterfall! Does this remind you of the "bandmap" in many contesting programs? With the right processor on your PC and the right radio, up to 700 callsigns can be decoded in real time.

Say you're a DXer and want to find out where in the pileup the DX is working. You copy the station the DX just worked, and you read his callsign on your "skimmer" screen. Voila'. Okay, say you ARE the DX and you just can't copy all those callsigns in the pileup. Then, let "Skimmer" pick out a callsign for you.

Now consider the contester using such a device. No waiting for a spotting network to show you where the

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DX is. And, who's to say you are or are not operating "assisted" with such a device? Who'll even know? I guess you can see why there is discussion going on in the contesting community.

Apparently, there are already some inexpensive software defined radio kits (SDR) that enable listening to an entire ham band's CW segment. Almost every PC produced today has a sound card and CW Skimmer is shareware that is already available—so equipping yourself is not much of an issue.

So, ladies and gents, here's something to catch your fancy and learn more about. No doubt there will be some wrinkles to be worked out for the testers among us, and I can just begin to hear the sniping rising from some segments of the amateur community. Yet, in time I'm sure this will be just one more technology embraced by amateur radio.

*(See a related article starting on Page 9 by Dick Williams, W3OA, citing his actual experience in using CW Skimmer with a SoftRock (software defined radio) and a "Rocky" software spectrum scope. —The Editor)*

### Charlotte Hamfest '08

The 2008 version of the Charlotte Hamfest lived up to expectations set by earlier years. The forums at the hamfest included a DX forum, a forum on software defined radios by FlexRadio, and a forum on D-Star presented by Ray Novak from ICOM-America.

The CDXA evening dinner was a sellout once again with a full house of some 80 folks just fitting into the Shanghai Restaurant for the evening's festivities.

We were treated, once again, to the presence of "The Tennessee 8"—whose numbers now exceed eight! Besides a number of CDXAers from way out of town—Ron Tingle, Bill Parris, Steve Reichlyn, Joe Spears, Scott Douglass, Ben Wasilaskas, Dave Anderson, Bob Southworth, Nyles McKeithan, Lynn Lamb, Carl Smith, Gary Martek, Robert McNeill, Jack Jackson, and Bill McDowell to name but a few—we enjoyed the company of Dan Henderson from ARRL; Rich Moseson, editor of CQ Magazine; Scott Robbins from Ten-Tec; and Dennis Motschenbacher from Yaesu.

There were LOTS of door prizes available. Prizes were donated to the mix from DX Publishing, Ten-Tec, CQ Magazine, INDEXA, SEDCO, ARRL, Yaesu, and the CDXA officers. We hope we didn't miss any gift donors.



Carl Smith, Dan Henderson, and Lynn Lamb reveling. Below, Rich Moseson and George Dominick talk shop.



Bob Bacharach wins the CDXA raffle. Below Ken Winston collects a new radio from Yaesu's Dennis Motschenbacher.



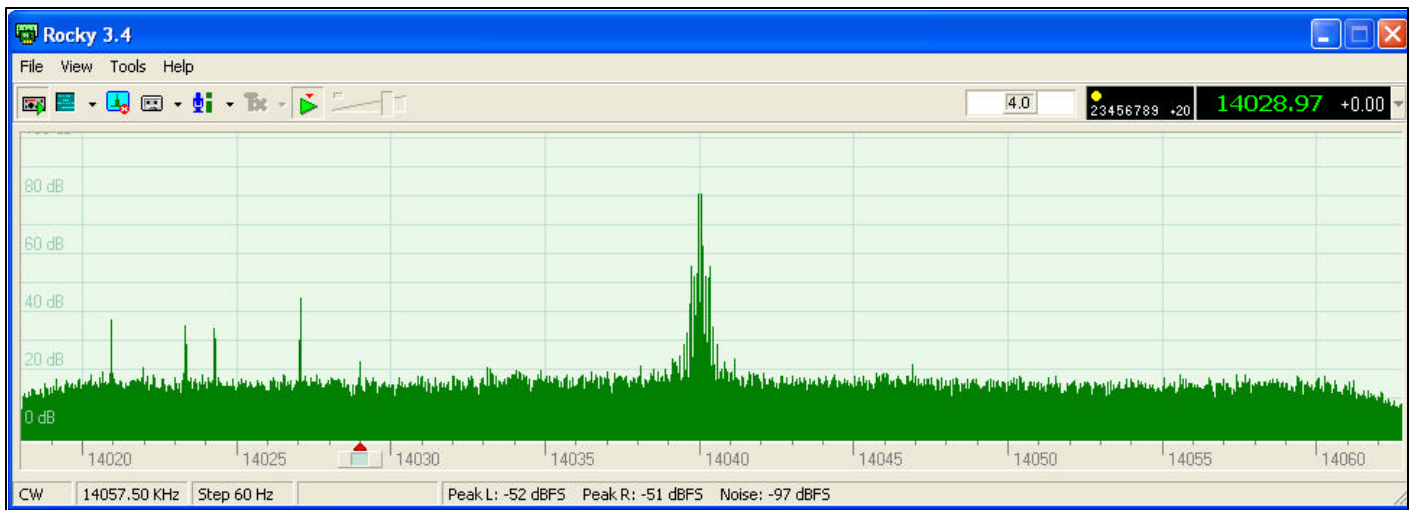
## SoftRock, Rocky, and CW Skimmer

Dick Williams, W3OA

The references K8YC mentioned in his article on CW Skimmer (see Page 6) inspired me to start a new project to see if CW Skimmer would help in working DX and contests. Rocky is a software component programmed by the same programmer as CW Skimmer and available from the same website. SoftRock receiver kits currently offered are single band devices. I decided to use a SoftRock tuned to the first IF of my TS-830 in order to use one SoftRock on multiple bands. Some characteristics of the TS-830 relevant to this application are that: 1) it is ham bands only so has a relatively low first IF frequency - 8.83 MHz, 2) it has a first IF output on the back panel for use with a panadapter, and 3) it does not have a serial port for computer control.

The following outlines some lessons I've learned so far on this project that has just begun.

- o Working with surface mount devices isn't all that hard nor does it require a lot of specialized tools. I did buy a new soldering iron from Radio Shack—a grounded iron with a narrow tip. The SoftRock instructions describe a technique that worked for me in installing the surface mount capacitors and integrated circuits. I was in no hurry and spent about 5 hours building the SoftRock Lite.
- o Rocky with a SoftRock works as a band scope (spectrum scope). Below is a screen shot from my set up.



It's monitoring the low end of 20 meters. All the traces below the 20 db line are noise. Those sticking above the 20 db line are real signals. The peak centered at 14040 is also noise, apparently from the SoftRock's oscillator. That is a part of the spectrum where you just won't see signals.

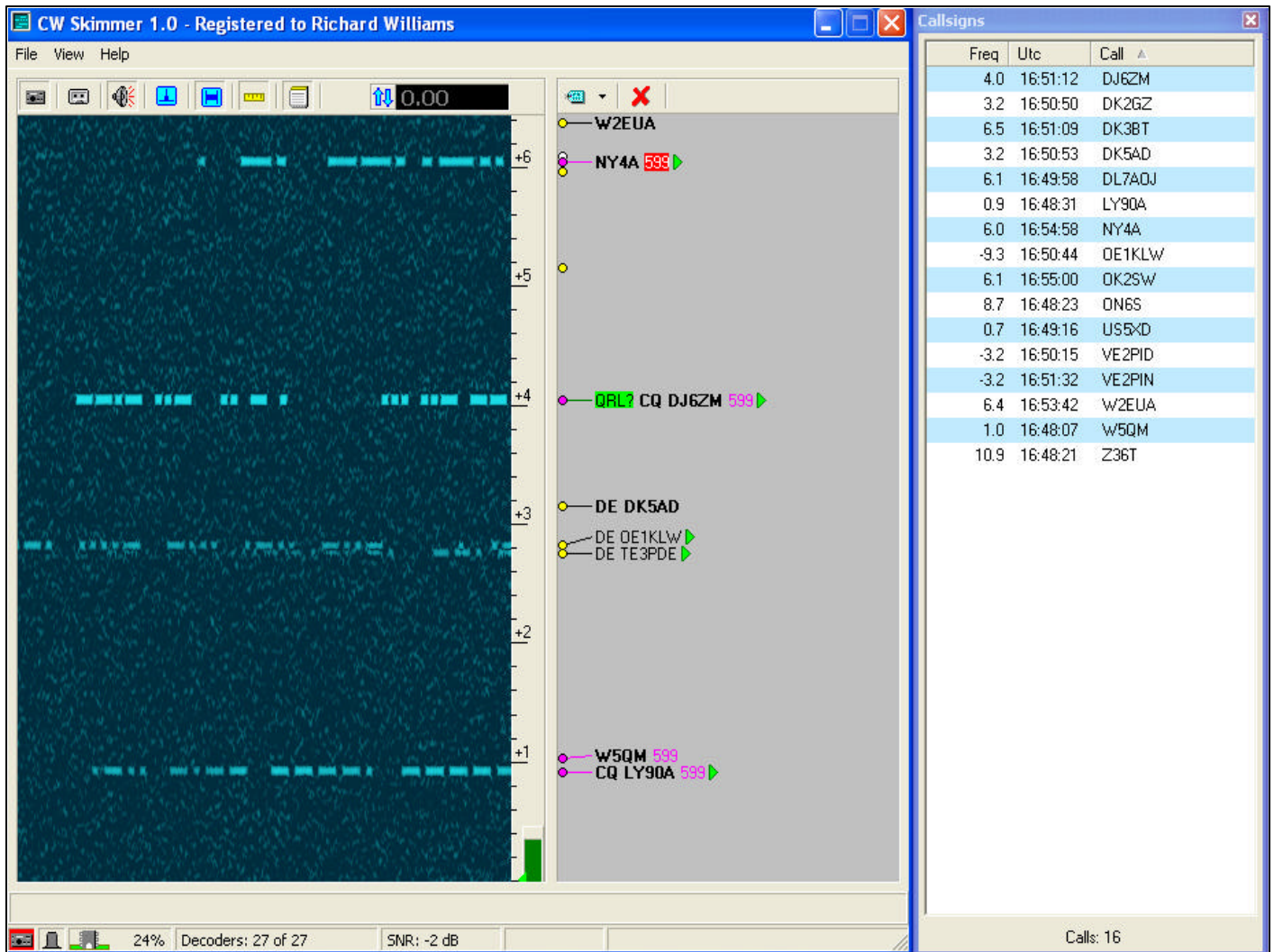
Rocky offers two sampling options, 48 and 96 KHz. The references say using a 48 KHz sampling rate will allow you to see 48 KHz of spectrum. The screen shot seems to verify that. The references also say a 96 KHz sampling rate will allow you to see 96 KHz of spectrum. I didn't see a significant increase in spectrum when using the higher sampling rate. This may be due to bandwidth limitations in the TS-830.

CW Skimmer has three modes of operation – looking at audio from a receiver, a SoftRock connected to an antenna, and a SoftRock connected to a receiver's IF. I tried the IF mode first but found I could only see a fraction of the bandwidth I expected. I then tried the SoftRock with antenna mode, but still connected to the TS-830 IF, and was able to see 48 KHz of spectrum but the CW decoding was very poor. That's when I started trading emails with the author of CW Skimmer, Alex, VE3NEA. I told him I was looking at The TS-830's IF but using the antenna mode to get the advertised band width. Quoting Alex "This is a bad combination. If you don't have CAT, the best thing you can do is use stand alone Softrock as a second receiver and monitor the whole band." He went on to say that a noise floor problem when looking at a receiver's IF degrades the CW copying capabilities so Skimmer only looks at 24 KHz at a time. And, if the radio has a roofing filter, the bandwidth would be even more limited.

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Below is a screen shot from CW Skimmer operating in the IF mode. It looks like it's doing a good job copying CW over the limited bandwidth.



The CW Skimmer web site recommends using a 2.5 GHz, Pentium4 computer. I believe that. My computer is a 2.3 GHz Celeron. I wanted to try CW Skimmer in a pileup situation and found TX5C working Europe on the bottom of 20 meters. In a few seconds the text at the bottom of the window showed that CW Skimmer was running 320 decoders and using 100% of my processor resources! So I plan to run Skimmer on its own computer with no other programs running.

What next? I've order another SoftRock which will cover 20 meters when connected to just an antenna. But I haven't given up on eventually having a multi-band capability.. Such boards are in beta testing now and I hope these will be available soon.

## The Back Page

Find a recap of CDXA's performance in the **ARRL International DX Contest** in February/March 2008.  
(See Page 1)

AA4ZZ finished Third Nationwide in **September VHF Contest**. (See Page 2)

**North Carolina QSO Party** team has a visit from Mr. Murphy—No Fourpeat in 2008. (See Page 4)

Check out the American Red Cross' new **Emergency Communications Vehicle**. (See Page 5)

**"Frequency Coordination" in the National Football League ???!!** (See Page 5)

Learn about a new technology being used in ham radio—**CW Skimmer**—and why it is causing a buzz in both a positive and a negative sense. (See related articles on Pages 6 and 8)

We hope you didn't miss the **Charlotte Hamfest '08**. If you did, check out what happened there on Page 7.

Don't forget to work **Fabrizio "Brix" Vedovelli**, one of CDXA's Italian members, who is a member of the **9X0R** (Rwanda) DXpedition that is starting operations on March 16 as this issue of the Pileup is being finished!

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**First Class Mail**

*See something wrong with your address label? Notify W3ZL at once, please.*