



15 May 2010



Information and news about D-STAR in Amateur Radio I

D-STAR Statistics

- Over 1800 Users Active Each Day
- Over 12,000 Registered Users
- Over 500 Repeater Systems

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Welcome to D-STAR Info
We're All About D-STAR

Welcome back to the next edition of the D-STAR Info Newsletter. This month's centerfold contains a complete listing of US D-STAR Repeaters. Additional listings are available from www.DSTARInfo.com.

There is a lot happening across the country and around the world with D-STAR, but we can't share it without your help. If you have D-STAR news in your area, a special operating event or can contribute some D-STAR knowledge and tips to other users, please let us know.

As always, your feedback is encouraged. Please send your news stories, photos, D-STAR tips and anything else D-STAR to us at info@DSTARInfo.com.

And visit www.DSTARInfo.com

D-STAR Info Newsletter's Anniversary D-STAR Continues to E X P A N D

There is a lot that has happened to D-STAR since the first issue of the DSTAR Info Newsletter a year ago. D-STAR has now expanded past a single source solution with a number of sources for repeaters and devices for people to communicate with. Now, that's not to say that the road has always been a smooth one. The D-STAR architecture is a relatively fragile one and experimentation sometimes impacts everyone on the network. I don't think that the initial developers had any idea that D-STAR would become as popular as it has, with the number of repeaters and users spread all around the world!

In the last year, we've seen a number of the IC-80AD and ID-880H Icom radios sold. We've also seen a large number of DVDongles sold. We've got a number of people selling interface boards that allow you to connect a standard FM radio to the D-STAR network. And we've got the G4ULF gateway software that has been tested and accepted by the US Trust Server team.

In the last issue of DSTARInfo News, Internet Labs introduced the DV Access Point Dongle, which completely sold out it's first batch before shipping. TX RX Systems has a number of duplexers and triplexers that they promote for D-STAR. Their 36-97-07053-A 1.2-1.3 GHz, Triplexer is built and design specifically for repeaters with the 1.2 GHz DV and DD modules. Daiwa has promoted their CN-801G D-STAR Meter for D-STAR as it supports 1.2 GHz.

There really is a lot going on with D-STAR. At a recent gathering, one ham mentioned how he likes D-STAR because there's always someone to talk to, as opposed to his club's FM repeater that no one seems to want to talk on. That's a long way from a few years ago when D-STAR repeaters sat idle most of the day. It's not uncommon to listen to D-STAR and hear people from the Central Europe, the UK, the US, Japan, and Australia. What makes D-STAR different is that this occurs every day and there have been a lot of friends made because of D-STAR.

John WB4QDX, Robin AA4RC, and , myself (Ed WA4YIH) recently made a trip to the NFDG Academy in Tallahassee Florida from Atlanta Georgia. John and I were in one vehicle and Robin the other. During the trip, we kept in touch with each other and with friends in Atlanta during the 300 mile drive using D-STAR. As many Amateurs have done on pilgrimages to Dayton, you can't just use simplex, no, we had the KJ4BDF repeater in one vehicle and the DV Access Point Dongle in the other, both connected to Reflector 30C in Atlanta. Yes, they both used the Internet and cellular modems, but aside from the fun of it, this helped demonstrate that D-STAR can be moved into just about any area in the event of an emergency.

So, when it comes to describing what D-STAR is, I think I'm going to use a relatively short answer:

D-STAR is FUN!

D-STAR for Everyone!

Go mobile!

ID-880H 3G | D-STAR

VERSATILE 2M/70CM MOBILE

- 50 Watt/VHF/UHF
- AM, FM, DV
- RX: 118-999.99MHz*
- 800 Alphanumeric Memory Channels
- Free Programming Software!†

†www.icomamerica.com/amateur/DSTAR
for details about free software



D-PRS™

IC-80AD 3G | D-STAR

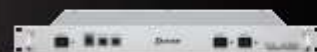
THIRD GENERATION 2M/70CM DUAL BANDER

- 5/2.5/.5/.1 Watt 2m/70cm
- AM, FM, WFM
- RX: 0.495-999.990MHz*
- Improved User Interface
- Li-Ion Power
- Free Programming Software!†

†www.icomamerica.com/amateur/DSTAR
for details about free software

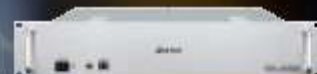


Shown with Optional
GPS Speaker Mic
(HM-189GPS)



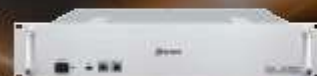
ID-RP2C REPEATER CONTROLLER

The cornerstone of the D-STAR system. Handles up to four HF modules. Basic in-band or crossband operation. Linking capabilities through the internet.



ID-RP2D 1.2GHZ DATA MODULE

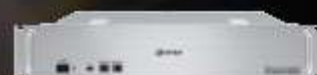
Access point with a data rate of up to 128kbps. Perfect for email, web applications and support via internet connection.



ID-RP2V 1.2GHZ DIGITAL VOICE MODULE



ID-RP2000V 2M DIGITAL VOICE MODULE



ID-RP4000V 70CM DIGITAL VOICE MODULE

Visit Your Icom Amateur Dealer Today!

*Frequency coverage may vary. Refer to owners manual for exact specifications.
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ICOM

D-RATS...Data for D-STAR and More

John Davis WB4QDX

Have you tried D-RATS? It's not a cure for rodents, but it is the most exciting program for all of your data needs on D-STAR. D-RATS is a free program developed by Dan Smith, KK7DS, that provides chat messaging, email, file transfer, position mapping and transfer of forms using the simple data connection to your D-STAR radio. With only a data cable, a PC and your D-STAR radio, a simple download and installation of D-RATS at <http://www.D-RATS.com> and you're quickly on the data side of D-RATS.

The current version of D-RATS is 0.3.2, but a constant stream of beta versions are available with new features being added weekly. D-RATS is over a year old, but if you haven't tried it in a while, you won't recognize the new features available.

Installing D-RATS is a simple installation with versions for Windows, Linux and Mac available. A quick configuration of your callsign, name and adding the D-STAR radio you plan to use and you're off and running. You can even get going on D-RATS without a D-STAR radio with a connection to the Internet. A public Ratreflector, or Repeater Proxy, is available to chat and exchange information with friends around the world. A Ratreflector can be easily setup locally to bridge radio and Internet access to stations.

The documentation and help file for D-RATS is very comprehensive, but new features are being added and complete instructions may lag a bit. The D-RATS mail list is a great resource for asking questions and finding out tips from other users. Join the mail list on the D-RATS website.

If you're into Emergency Communications, D-RATS is just the tool on D-STAR. Radios transmitting GPS position data is displayed in D-RATS built-in mapping (and complete US maps can be downloaded from the included Map Downloader). Files can be sent and received from one user to another. If a user designates a share folder, other users can view and initiate downloads to their PC without the other user.

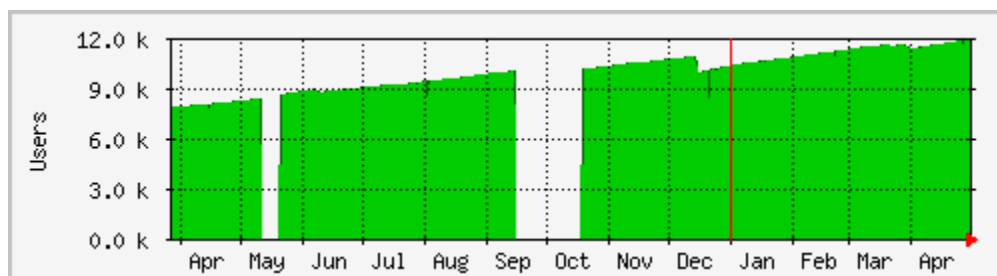
The real power of D-RATS appears to be just around the corner. Many Emergency Communications organizations, such as ARES and RACES, have a base of Packet operators and another group of D-STAR data users. How do you bridge them together to take advantage of all data user's capabilities. Dan is building the foundation for this capability now with connectivity to a KISS-capable TNC for Packet or AGWPE. A Ratreflector with one port on the TNC and another on the D-STAR radio can provide the bridge allowing D-RATS to serve Packet and D-STAR users with a full featured application. The AX.25 protocol will be added soon allowing the Packet side to work through digipeaters.

If you haven't tried D-RATS, you owe it to yourself to check it out. Join some friends on the public Ratreflector or link to Reflector 15C for data users.

D-STAR Continues to Grow

D-STAR continues to experience tremendous growth increasing from around 11,000 registered users in Feb, 2010 to over 11,000 in three months.

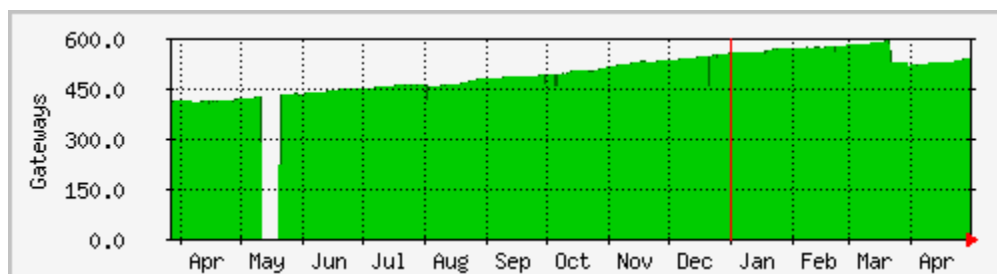
Registered D-STAR Users—Courtesy of DStarUsers.org



D-STAR Continues to Grow

The number of D-STAR Gateways continues to grow. Each Gateway may have from one to four repeaters connected.

Registered D-STAR Gateways (multiple repeaters are usually registered under one gateway)



D-STAR Bridges the Gap

How would you provide public service communications for a bicycle ride that covers one hundred miles, between two cities, through a hilly rural area? Well D-STAR of course! That is the question that was presented to the amateur community. The event stretched between two Georgia cities, Atlanta and Athens. The mission was to provide communications for the five or so break points along the route and the ten SAG vehicles along the route with the management of the Bike MS: Deloitte. Atlanta to Athens Ride.

The course was too spread out for full repeater coverage, much less simplex coverage. The details of the operation were covered in the accompanying article by Stan Edwards, WA4DYD, AEC for Training, Clarke Co. ARES, Vice President Athens Radio Club.

This event was a real eye opener on many fronts. The vast majority of the operators were brand new to D-STAR and made their first contacts when checking in with net control to report that their station was on duty! This was accomplished by pre-programming the 20 radios used for the event with all the settings needed for the two day event. This included putting the IC-2820s into the single display mode. All that had to be done when operators showed up in the morning was to program their call sign into the my call sign field.

The rookie D-STAR operators did a wonderful job jumping into the digital age. The course had a number of RF propagation challenges but the use of two permanent D-STAR repeaters and one portable made the huge challenge very manageable. The new D-STAR users felt right at home with the new equipment and operated them like veteran operators in a short time.

The availability of 20 IC-2820s for an event like this was a onetime, very fortunate happenstance. The event organizers would like for similar arrangements to be made for the 2011 event. Unfortunately the radios used this year will already be deployed and serving in county EMA offices around Georgia by then.

This event has demonstrated how valuable a pool of radios can be to support spontaneous communications over a large region. Just like the kind of situation that is faced every time amateurs respond to a natural disaster. What is needed is to find funding to have a batch of radios to be held available for events like this as well as to be on hand for emergency and disaster deployment. The ARRL has developed Ham Aid Go Kits for sending radio equipment to disaster areas and a similar approach would be great with D-STAR equipment!



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Net control and bike ride officials were able to keep tabs on the riders as they traversed the course from downtown Atlanta to downtown Athens on Saturday and return on Sunday. The use of D-STAR provided a novel approach to tracking vehicles using the same radio as used for voice. Previously it was necessary to operate two radios: one for voice and one for traditional APRS. With the integration in D-STAR's data channel and integrated GPS, one radio was all that was needed. The ability to link all repeaters digitally provided a uniform operation without all the variables normally encountered in analog linked repeater systems. Having a seamless network allowed ride break point managers and the operations center to maintain a view of the entire course, even though the various locations might be on different repeater systems. The projected display of vehicles over the mapped route proved helpful to visualize what was transpiring, even getting a wayward SAG van back on course.

In summary, the event provided an initial look at the wide scale application of D-STAR in an event requiring multiple repeaters and operators unfamiliar with the technology. While some problems were encountered, they were rapidly resolved, including relocation of the portable repeater twice to improve coverage of a segment of the course without normal access. It also educated a large group on the operation of and benefits of D-STAR in certain applications.



WA6IRC Earthquake Script

Ed, KB6THO



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For general inquiries, send to
Info@DSTARInfo.com

One of the really neat things about D-STAR is the ability to use your radio to command the gateway to "Do Something". By setting URCALL properly, the D-STAR add-on dplus will run a "shell script" to perform a task on the gateway server. Our gateway runs a unique script that queries the US Geological Survey and returns a list of recent California earthquakes as a text message on your radio. The most recent quake from the past hour is listed first, in the format of magnitude and general location, i.e. "3.8 LOS ANGELES".

Living in Earthquake Country, I thought, "The next time the ground shakes, wouldn't it be neat to get a text message quake report on my radio?" At the time I was setting our gateway up with the NJ6N/G7LWT standard scripts and realized this was a "Can Do". And thus WA6IRCEX was born.

The script proved itself just a few weeks later on April 4 during a local family get together. We felt an earthquake for sure, but where was it? I ran the quake script and got back "7.2 BAJA". Moments later the news reported a 7.2 earthquake in Baja California. Ham radio had it first!

The family was impressed. "How does your radio do that... magic?" I'd like to say so, but it's just a Linux shell script. The USGS posts a text file of quakes for the past hour, listing many parameters such as date, time, lat/long, magnitude, depth, and location. The script downloads the USGS text file, pulls out magnitudes and locations for "California" quakes, abbreviates the locations to fit the 20 character text message limit, then sends the file one line at a time to the port where the query originated. There is a delay between lines to give you a chance to read the data. If there have been no California quakes for the past hour, the script will send the rare "NO QUAKES PAST HR" message.

Thanks to Brian, NJ6N and Darren, G7LWT for the inspiration to "roll my own script". Check out our other scripts at <http://ladstar.org>.

D-STAR Training Academy

Paul Eakin KJ4G

2010 kicked off new concept in D-STAR training. Paul Eakin, KJ4G, developed a concept of providing a broad range of D-STAR topics of interest from beginners to experienced users and the North Florida D-STAR Academy was born. Paul is the ARRL Section Manager for North Florida and recognized the power of D-STAR for emergency communications as well as the value of providing information on one of the most exciting new technologies to Amateur Radio.

February 6th brought over 100 participants from around the southeast to Tallahassee for a full day of informative presentations and information. Presentations for beginners provided the basic knowledge to get on the air, make local contacts and link around the world. More in depth training on low and high speed data using D-RATS, 1.2 GHz activity on the ID-1, and repeater setup and operation. Presenters included Ray Novak (N9JA), Fred Varian (WD5ERD), Scott Honaker (N7SS), Robin Cutshaw (AA4RC), Ed Woodrick (WA4YIH), John Davis (WB4QDX) and Buddy Morgan (WB4OMG).

D-STAR

Tips and Tricks

Transmitting DPRS

Instead of setting your radio to transmit your DPRS information every few minutes, set it to transmit only when you are. Then, whenever you are transmitting, everyone can see where you are at. And when you aren't talking, you don't tie up the repeater

Transmitting when channel is busy

Many of the radios have a feature that keeps you from transmitting when the radio is receiving something. Turn it on and this helps to keep you from doubling with other stations.

If you have any Tips or Tricks, send them to Info@DSTARInfo.com





When the going gets rough, turn to the rat.

D-RATS

EmComm Software for D-STAR

powerful • multi-platform • open source

With only a pair of D-STAR radios (or an entire D-STAR repeater stack) a variety of data transmit methods are supported, including:

- Instance message chat
- Error-free file transfers
- Structured forms
 - A template builder to electronically reproduce any printed form
 - A way to fill out a form and send it to another station
 - A printable view that can be tailored to resemble the original printed format
 - ICS-213 and ARRL radiogram forms out-of-the-box
- Integrated map with free data
- Automatic message forwarding

What else can D-RATS do?

- Station status and “last heard” tracking
- RSS/CAP feed broadcasting
- Real-time on-screen position plotting
- Multiple static map overlay support
- Network linking of multiple RF segments
- Email and WL2K gateway support
- Transparent stream compression
- Automatic transfer window scaling
- Freely available and GPL licensed
- Runs natively on Linux, Windows®, and Mac OS®



Version 0.3.2 now available: <http://d-rats.com>