# **D-RATS Training**

### D-RATS Lesson schedule

- 1. Introduction (need for dedicated email address and a WINLINK address)
- 2. SFARES Toolkit
  - a. Situation (EOC, SAR, DOH, Skywarn, Public Service)
  - b. Systems (Internet, VHF/UHF repeaters, HF, Winlink 2000 System)
  - c. Software
- 3. D-RATS Installation and Configuration
- 4. CHAT
- 5. FILES
- 6. MESSAGES
- 7. MAP including Map Downloader
- 8. RF Segment with D-STAR radios
- 9. Trouble shooting
- 10. Resources

- 3. D-RATS installation and configuration (1 hour)
- D-RATS software free (<u>http://www.d-rats.com</u>) in Windows, Linux or MacOS
- D-RATS Operating Guide: <u>D-RATS Operating Guide 0.3.3.pdf</u>
- Operating Guide Update: <u>D-RATS\_Operating\_Guide\_Addendum\_02232012.pdf</u>
- <u>Quick Set Up.pdf</u> for basic settings to get started using D-RATS
- Latest D-RATS release: **Daily Build 02232012** for Linux, MAC and Windows at:
- http://dev.d-rats.com/drats\_daily/daily-02232012/
- Configurations:
  - D-RATS configuration Part I Rev 1.doc
  - D-RATS configuration Part II Rev 1.doc

Note: You don't need to be a ham to use D-RATS on the Internet. However, you do need to be a ham to use D-RATS if you use D-RATS and the Radio Frequency Segment (connect D-RATS to a radio).

### 4. CHAT Window [Tab]

### Main Area

Where real time text is exchanged with all stations

Received and transmitted text displayed in different colors and includes the port name and time stamp. (Colors can be adjusted in Preferences > Appearance)

Text can be selected, copied and pasted into other applications. Likewise, text can be pasted into the [typing box] from other applications.

D-RATS: N4VIP	
file View Help	C
Messages Chat Files Event Log	Stations (12)
	AB9FT-W
Add Filter Remove Filter Join Channel Open Private Chat	F4DKF
D-RATS vdaily-02232012	EA1AXY
opyright 2012 Dan Smith (KK7DS)	DK3CW
2013-12-23 08:09:49] [RAT] KC9SJY-R: [QST] AB9FT/KC9SJY (Repeater) Ratflectors - Sheboygan, WI	WA0NUU
lePreferences>Radio>Add: 162.230.129.194. http://www.lepreferences>Radio>Add: 162.230.194. http://www.lepreferences>Radio>Add: 162.230.194. http://wwww.lepreferences>Radio>Add: 162.230.194. http://wwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww	DLONOT
	DB0ZAV
C95JY-R: 9001 (internet only)	W5MPZ-R
B9FT-1: 9000 (internet only, WX/Propagation QSTs)	KL1IF
39FT: 9002 (Internet to VHF gateway using ICOM 2200H with WX QSTs)	K2TJW
18:10:07] KC9SJY-R: Now Unattended: Star Riders Amateurs D-RATS Station (Port RAT) 18:10:08] KK7PW: Now Unattended: Online (D-RATS) (Port RAT)	KK7PW
<b>18:10:09] W5MPZ-R:</b> Now Online: W5MPZ Ratflector system monitor (Port W5PMZ)	KC9SJY-R
8:10:09 KL1IF: Now Online: Online (D-RATS) (Port RAT)	
18:10:09] K2TJW: Now Unattended: Online (D-RATS) (Port RAT)	
8:10:10] DL0NOT: Now Unattended: [EmComm-HFLink-ALE-Station-Karben] (Port RAT)	
18:10:10] DB0ZAV: Now Unattended: [QRA DB0ZAV WinMor/PacTor WinLink RMS - QTH Karben JO40jf QRV] (Port RAT)	
08:10:11] WAONUU: Now Online: Online (D-RATS) (Port RAT) 08:10:12] F4DKF: Now Online: Online (D-RATS) (Port RAT)	
<b>38:10:12] EA1AXY:</b> Now Online: Luis IN61FW (Port RAT)	
Bs:10:12] DK3CW: Now Unattended: Onair [EmComm-NotFunk-Frankfurt] on REF15C (Port RAT)	
18:10:14 AB9FT-W: Now Unattended: Josh at work - Sheboygan, WI (Port RAT)	
Aain	
1T V	nd My Status
Quick Messages	Online
QSTs	Online (D-RATS)
tion AB9FT-W is now Unattended: Josh at work - Sheboygan, WI	N4VIP

Stations Pane (Area right side of the window)

Displays call signs heard and the time since last heard in parentheses

Hover mouse over a call sign to display their status and status message

Blue means Online, Orange means Unattended

Right click mouse on a call sign to display a context sensitive menu of additional operations.

Ping: Check the status of a station

Test Connectivity: Test quality of path to an RF station (important for RF Segment)

Request Position: Get the location of a station to be displayed on the map.

Get version: Request version of D-RATS

Request mail check: Check if a station is holding mail for you

Status Pane

What other users see when they hover their mouse over your call sign

Use the drop-down arrow to set your status as "Online" or "Unattended"

## Type short message to be displayed with your status on the second line This is the text that appears in parentheses (as above)

#### CHAT Window [Tab](continued)

D-RATS: N4VIP	
Eile <u>V</u> iew <u>H</u> elp	
Messages Chat Files EventLog	Stations (12)
4 🗃 🙆 🍘	KL1IF
Add Filter Remove Filter Join Channel Open Private Chat	AB9FT-W
D-RATS vdaily-02232012	WA0NUU
Copyright 2012 Dan Smith (KK7DS)	KC9SJY-R
	EA1AXY
2013-12-23 08:27:15] W5MPZ-R: Now Online: W5MPZ Ratflector system monitor (Port W5PMZ) 08:27:15] DK3CW: Now Unattended: Onair [EmComm-NotFunk-Frankfurt] on REF15C (Port RAT)	DL0NOT
08:27:15] DB0ZAV: Now Unattended: [ORA DB0ZAV WinMor/PacTor WinLink RMS - OTH Karben JO40if ORV] (Port RAT)	F4DKF
08:27:15] K2TJW: Now Unattended: Online (D-RATS) (Port RAT)	KK7PW
08:27:16] KK7PW: Now Online: Online (D-RATS) (Port RAT)	W5MPZ-R
D8:27:17] DLONOT: Now Unattended: [EmComm-HFLink-ALE-Station-Karben] (Port RAT)	DK3CW
38:27:17] F4DKF: Now Online: Online (D-RATS) (Port RAT) 38:27:18] KC9SJY-R: Now Unattended: Star Riders Amateurs D-RATS Station (Port RAT)	DB0ZAV
08:27:10] KL953T-K: Now Online: Luis IN61FW (Port RAT)	K2TJW
8:27:19] WAONUU: Now Online: Online (D-RATS) (Port RAT)	
08:27:20] KL1IF: Now Online: Online (D-RATS) (Port RAT)	
08:27:20] AB9FT-W: Now Unattended: Josh at work - Sheboygan, WI (Port RAT)	
Main	
AT -	and My Status
Quick Messages	Online
QSTs	Online (D-RATS)
tion AB9FT-W is now Unattended: Josh at work - Sheboygan, WI	N4VIP

Port Selection

Use the drop down arrow to select the port where text and QSTs are sent All enabled ports are monitored and can receive messages and file transfers, but text and QSTs only go out the selected port

#### **Quick Messages**

Allows storage of commonly used phrases when communicating via text Point and double-click on a message to send it

Use buttons at right to add or remove Quick Messages

### QSTs

Various types of bulletins can be sent periodically,

May contain: a string of text, the contents of a text file, your current position, the position of a station or static location in the map window, the current temperature at an airport, or an RSS or CAP feed

Use the add button to create a new QST

### CHAT Window

### [Tab](continued)

le View Help	
Assages Chat Files Event Log	Stations (11)
4 🗑 Ka 🗑	AB9FT-W
dd Filter Remove Filter Join Channel Open Private Chat	KL1IF
RATS vdaily-02232012	W5MPZ-R
pyright 2012 Dan Smith (KK7DS)	KC9SJY-R
012 12 22 00 40 451 K2TIN, New Userhanded, Osline (D. DATC) (Det DAT)	DK3CW
(013-12-23 08:49:45] K2TJW: Now Unattended: Online (D-RATS) (Port RAT) (8:49:45] EA1AXY: Now Online: Luis IN61FW (Port RAT)	WA0NUU
8:49:47] DLONOT: Now Unattended: [EmComm-HFLink-ALE-Station-Karben] (Port RAT)	DLONOT
8:49:47 F4DKF: Now Online: Online (D-RATS) (Port RAT)	F4DKF
8:49:47] DB0ZAV: Now Unattended: [QRA DB0ZAV WinMor/PacTor WinLink RMS - QTH Karben JO40jf QRV] (Port RAT)	DB0ZAV
8:49:48] WAONUU: Now Online: Online (D-RATS) (Port RAT)	K2TJW
8:49:48] KC9SJY-R: Now Unattended: Star Riders Amateurs D-RATS Station (Port RAT)	EA1AXY
18:49:49] [RAT] KC9SJY-R: [QST] AB9FT/KC9SJY (Repeater) Ratflectors - Sheboygan, WI le>Preferences>Radio>Add: 162.230.129.194, port #	
C95JY-R: 9001 (internet only) B9FT-1: 9000 (internet only, WX/Propagation QSTs) B9FT: 9002 (Internet to VHF gateway using ICOM 2200H with WX QSTs) D8:49:49] DK3CW: Now Unattended: Onair [EmComm-NotFunk-Frankfurt] on REF15C (Port RAT) D8:49:50] KL1IF: Now Online: Online (D-RATS) (Port RAT) D8:49:50] W5MPZ-R: Now Online: W5MPZ Ratflector system monitor (Port W5PMZ) D8:49:51] AB9FT-W: Now Unattended: Josh at work - Sheboygan, WI (Port RAT)	-
Main	
Seno	My Status Online
Quick Messages OSTs	Online (D-RATS)
tion AB9FT-W is now Unattended: Josh at work - Sheboygan, WI	N4VIP

#### Filters (3 types)

Incoming chat text from all active ports goes to Main area in the chat window. For large amounts of activity, it may be desirable to sort incoming Chat text using Filters Filter strings used to parse incoming text and divert it into other areas in the chat window Filters (when established) appear as Tabs at the bottom of the Chat window Filter tabs may be dragged and dropped to change their order

#### **Add Filter**

Click "Add Filter" and enter a string of text. Any incoming Chat messages containing text matching the filter sent to the filter tab and not the main area. In the above example, any Chat message containing [QST] is sent to the filter Tab.

#### Channels

A variation on the filter concept allows you to create "channels" within the Chat window. Multiple stations with a similar task may be grouped together or communications with a specific location can be separated from the Main traffic area. Example: Any station may communicate directly with the EOC or the Hospital during a Search & Rescue operation.

#### **Private Chat**

The third version allows you create a "private" channel with another station

### 5. FILES Window [Tab]

Transfer files from one station to another using <u>D-STAR radio</u> or the <u>Internet</u>

- Left side of the screen shows files in your local sharing folder (defined in Preferences>Path)
- Right side of the screen displays files in the remote stations sharing folder



FILES Window [Tab](continued)

To transfer from an online station:

- Use the drop down arrows right side of screen to select a station and the port
- Click on connect button
- Remote stations file list will soon appear on the right side of the screen

[Screen shows that I selected Port W5MPZ, Station W5MPZ-R, connect and files available on W5MPZ-R]

le <u>V</u> iew <u>H</u> elp		
Aessages Chat Files Event Log		Stations (3)
😂 🗃 📤 Local Lefresh Delete Upload	Connect Disconnect Download Delete	W5MPZ-R KB5HPT (2m)
Filename	Station: W5MPZ-R	KE5ILI (2m)
3 Forms 1.txt	Filename A Size Date	i i i i i i i i i i i i i i i i i i i
4 Maps 1.txt	D-RATS Albuquerque map sites.csv 349 B 15:24:06 2012-11-12	
AGWPE-DRATS.txt	D-RATS configuration Part I Rev 1.doc 373.0 KB 21:11:41 2013-08-09	
D-RATS Albuquerque map sites.csv	D-RATS configuration Part II Rev 1.doc 154.0 KB 21:16:51 2013-08-09	
D-RATS configuration Part I Rev 1.doc	D-RATS Creating Static Overlays.pdf 20.0 KB 15:35:37 2013-11-20	
D-RATS configuration Part II Rev 1.doc	D-RATS Part IV for D-STAR setup V2.doc 86.0 KB 13:14:08 2013-12-17	
D-RATS Creating Static Overlays.pdf	D-RATS_Basic_E-mail_Procedures.pdf 81.0 KB 15:38:19 2013-11-20	
D-RATS Part IV for D-STAR setup V2.doc	D-RATS_operating_guide_0.3.3.pdf 1397.0 KB 15:59:43 2013-11-20	
D-RATs Training for Skywarn Group@2013-06-07	D-RATS_Operating_Guide_Addendum_02232012.pdf 110.0 KB 13:17:45 2013-12-17	
D-RATS WL2K gateways.txt	D-STAR and SFARC.txt 373 B 13:22:49 2013-01-12	
D-RATS_Basic_E-mail_Procedures.pdf	Email showing up in Outbox.txt 810 B 13:18:12 2013-12-17	
D-RATS_operating_guide_0.3.3.pdf	Email test PART 1.txt 1.0 KB 16:08:36 2013-11-20	
D-RATS_Operating_Guide_Addendum_02232012.	Email test PART 2.txt 1.0 KB 14:14:05 2013-08-21	
D-Star radios.txt	Gmail accounts for D-RATS.txt 841 B 13:18:40 2013-12-17	
DRATS overlay_LosAlamos.csv	Key NM SAR Ham Repeaters.csv         8.0 KB         08:48:30 2013-12-14	
Email Primer.txt	losalamos_firestations.csv 471 B 08:49:06 2013-12-14	
Email showing up in Outbox.txt	N5BGC shackJPG 170.0 KB 13:23:50 2013-01-12	
Email test PART 1.txt	WINLINK accounts for D-RATS.txt 624 B 13:19:20 2013-12-17	
Email test PART 2.txt		My Status
Forms.txt	1	Online
	Ш	Online (D-RATS)

FILES Window [Tab](continued)

- To retrieve a file, highlight it and click download
- To send a file to the remote station, highlight a file in your local list and click upload
- Lower left windows shows the two D-RATS programs (yours and the remote) handshaking
- Be sure to click on the disconnect button when you are finished exchanging files with a station

Note: Lower left window shows everything put into the Event Log Tab

Aessages Chat Files Event Log		Stations (3)
€ ිම	Connect Disconnect Download Delete	W5MPZ-R KB5HPT (8m)
Filename	Station: W5MPZ-R	KE5ILI (9m)
D-RATS_Operating_Guide_Addendum_02232012.	Filename A Size Date	
D-Star radios.txt	D-RATS Albuquerque map sites.csv 349 B 15:24:06 2012-11-12	
DRATS overlay_LosAlamos.csv	D-RATS configuration Part I Rev 1.doc 373.0 KB 21:11:41 2013-08-09	
Email Primer.txt	D-RATS configuration Part II Rev 1.doc 154.0 KB 21:16:51 2013-08-09	
Email showing up in Outbox.txt	D-RATS Creating Static Overlays.pdf 20.0 KB 15:35:37 2013-11-20	
Email test PART 1.txt	D-RATS Part IV for D-STAR setup V2.doc         86.0 KB         13:14:08 2013-12-17	
Email test PART 2.txt	D-RATS_Basic_E-mail_Procedures.pdf 81.0 KB 15:38:19 2013-11-20	
Forms.txt	D-RATS_operating_guide_0.3.3.pdf 1397.0 KB 15:59:43 2013-11-20	
Gmail accounts for D-RATS.txt	D-RATS_Operating_Guide_Addendum_02232012.pdf 110.0 KB 13:17:45 2013-12-17	
Key NM SAR Ham Repeaters.csv	D-STAR and SFARC.txt 373 B 13:22:49 2013-01-12	
Key players tonight.txt	Email showing up in Outbox.txt 810 B 13:18:12 2013-12-17	
losalamos firestations.csv	Email test PART 1.txt 1.0 KB 16:08:36 2013-11-20	
Izhuf 1.exe	Email test PART 2.txt 1.0 KB 14:14:05 2013-08-21	
Net close.txt	Gmail accounts for D-RATS.txt 841 B 13:18:40 2013-12-17	
Next meetings.txt	Key NM SAR Ham Repeaters.csv 8.0 KB 08:48:30 2013-12-14	
NM ARES Digital Drill 24 Nov.txt	losalamos_firestations.csv 471 B 08:49:06 2013-12-14	
Santa Fe County Repeaters.csv	N5BGC shack.JPG 170.0 KB 13:23:50 2013-01-12	
SFARES QTHs.csv	WINLINK accounts for D-RATS.txt 624 B 13:19:20 2013-12-17	
TEXT FILE.txt		My Status
WINLINK accounts for D-RATS.txt		Online
		Online (D-RATS)

# FILES Window [Tab](continued)

Event Log Tab is a list of all transactions that have taken place on the port or ports you are connected to. This is useful for troubleshooting and gaining knowledge about how D-RATS works behind the scenes. You can't edit or copy this screen.

Eile <u>V</u> iew <u>H</u> elp	
Messages Chat Files Event Log	Stations (3)
Show event type: All  Containing text: Enter filter text	W5MPZ-R (1m)
Time	KB5HPT (13m)
2014-01-05 08:55:33 File "N5BGC shack.JPG" Received	KE5ILI (14m)
2014-01-05 08:42:46 Station W5MPZ-R is now Online: W5MPZ Ratflector system monitor	
2014-01-05 08:42:45 Station KB5HPT is now Unattended: KB5HPT, Lew, El Paso, TX DM61sv	
2014-01-05 08:42:41 N4VIP replied to ping from KE5ILI with: Don in Santa Fe, NM DM65xq [W5PMZ]	
2014-01-05 08:42:40 KE5ILI pinged CQCQCQ [W5PMZ] (Request)	
2014-01-05 08:42:11 Station KESILI is now Online: Online (D-RATS)	
2014-01-05 08:34:12 Station KB5HPT is now Unattended: KB5HPT, Lew, El Paso, TX DM61sv	
2014-01-05 08:34:12 KB5HPT replied to ping from N4VIP with: KB5HPT, Lew in El Paso, TX, DM61sv [W5PMZ]	
2014-01-05 08:34:11 Station W5MPZ-R is now Online: W5MPZ Ratflector system monitor	
2014-01-05 08:34:11 W5MPZ-R replied to ping from N4VIP with: Running D-RATS 0.3.3 (Linux - Ubuntu 10.04.4 LTS) [W5PMZ]	
2014-01-05 08:34:04 N4VIP pinged CQCQCQ [W5PMZ] (Request)	
2014-01-05 08:33:42 ICOM: Unable to connect (Unable to open serial port)	
💡 2014-01-05 08:33:42 D-RATS Started	
	My Status
	Online
	Online (D-RATS)
	N4VIP

### 6. MESSAGES Window [Tab]

Prior to using the MESSAGES tab, you must configure your Outgoing Email and Email Accounts. After doing so, you should confirm that POP is enabled in your Gmail Account. To do so, log into your Gmail account, go to Settings>Forwarding and POP/IMAP and check that POP is enabled.

Where all pre-formatted messages are sent and received

Looks like and functions as e-mail client software

User can exchange pre-formatted messages with:

- Other D-RATS users;
- Internet e-mail servers; and

• WinLink 2000 System (WL2K) RMS stations or CMS servers.

To send and receive internet e-mail, you must enter incoming and outgoing <u>server information</u> in Preferences window

D-RATS only sends and receives plain text, and does not support HTML based e-mail For this reason you should set up an e-mail account just for use with D-RATS, e.g. <u>donhinsman@gmail.com</u>



- Other D-RATS users using New>memo (Informal Memo form)
  - Sends a memo to another online Station

Fill in Form with final destination Call sign

Note: One can Send, Save (goes into the Draft box), Send via or Print (shows on screen)

				<u> </u>
<u>File View H</u> elp Messages Cha	t Files Event Log			Stations (0)
New Forwa	rd Reply Delete Mark Read Mark Unread Send/Receive			
ICS213 OR WashC			<ul> <li>Type ↓ Date ▼</li> </ul>	
ICS213 US OS				
email hics260				
memo				
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		Save Send Via Print		
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Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     WSSAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages Chat Files Event Log New Forward Reply Delete Mark Read Mark Unread Send/Receive Drafts Drafts Inbox Outbox Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages Chat Files Event Log New Forward Reply Delete Mark Read Mark Unread Send/Receive Drafts Drafts Inbox Outbox Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages Chat Files Event Log New Forward Reply Delete Mark Read Mark Unread Send/Receive Drafts Drafts Inbox Outbox Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages Chat Files Event Log New Forward Reply Delete Mark Read Mark Unread Send/Receive Drafts Drafts Inbox Outbox Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m)
Messages     Chat     Files     Event Log       New     Forward     Reply     Delete     Mark Read     Mark Unread     Send/Receive       Drafts     Sender 4     Recipient 4     Subject       Inbox     N4VIP     W5SAF     MEMO TEST       Sent     Sent	<ul> <li>Type &lt; Date ▼</li> </ul>	WSSAF (1m) WSMPZ-R (20m) My Status Online <b>v</b>
Messages Chat Files Event Log New Forward Reply Delete Mark Read Mark Unread Send/Receive Drafts Drafts Inbox Outbox Sender 4 Recipient 4 Subject M4VIP W5SAF MEMO TEST	<ul> <li>Type &lt; Date ▼</li> </ul>	W5SAF (1m) W5MPZ-R (20m)

Used "Send" so memo will stay in the Outbox until W5SAF comes online on W5MPZ

# SEND via Note: Send via calls up the Enter destination window

📦 Enter destination	X
Station	Unknown 💌
Port	W5PMZ 💌
	<u>O</u> K <u>C</u> ancel

In the following Window, I have selected W5SAF (online in the Station Panel).

The email sent by "Send via" will first go to the Destination station (e.g. W5SAF) by the designated port. The designated port must have already identified the sender station in Preferences>Email access to enable reception of the email. Since the "messages" is an email, the destination station will see the "message" in his/her Outbox and can then send via his/her internet server. If the Port wasn't to a RATflector (via the internet) but rather a radio (a connected D-STAR), then Send via allows a bridge by the RF segment over areas with internet outage.

Enter destination		Ĺ	23
Station	W5SAF		-
Port	W5PMZ		•
	<u>О</u> К	<u>C</u> ancel	

- Internet e-mail address using New>email (Email Message)
  - Sends an email to the SMTP server defined in your Preferences>Network>Outgoing Email (e.g. SMTP.GMAIL.COM)

• Note: you can only have one Outgoing Email server defined but many Preferences>Network>Email Accounts (e.g. POP3.GMAIL.COM)

Fill in Form with final destination email address

🐞 D-RATS: N4VIP		
Eile View Help		
Messages Chat Files Event Log		Stations (1)
		W5SAF (5m)
New Forward Reply Delete		
Drafts Sender   Rec Save Send Via Print	I Type I Date ▼	
Dutbox		
E Routing Information		
Source Calisign N441P		
Destination Callsign W5SAFDRATS@gmail.com		
Subject Test 5 from N4VIP		
Message		
ASLKGDFLNVLN,		
Untitled 73 de N4VIP on D-RATS		
		My Status
1 Path		Online 💌
		Online (D-RATS)
		N4VIP

• Internet e-mail address

# Used "Send" so appears in the Outbox and then disappears (has been sent)

🖇 D-RATS: N4VIP		
Eile View Help		-
Messages Chat Files Event Log		Stations (1)
New Forward Reply Delete Mark Read Mark Unread Send/Receive		W5SAF (6m)
Drafts Sender 4 Recipient 4 Subject 4 Type	e 🖣 Date 🔻	
📄 Inbox 💫 N4VIP W5SAFD Test 5 from N4VIP ema	ail 14:2	
Cutbox Sent Trash		My Status
		Online •
		Online (D-RATS)
		N4VIP

#### Can be seen in the Sent box

<u>V</u> iew <u>H</u> elp				_
ssages Chat	Files Event L	og		Stations (1)
) . 🗟	<del>()</del>			W5SAF (8m)
w Forward	Reply Dele			
Drafts		Recipient 4 Subject	Type I Date I America Americ America America Americ America America Ame America America Ame	
Inbox	N4VIP	W5SAFD Test 5 from N4VIP	email 14:2	
Outbox	🔛 N4VIP	W5SAFD TEST 4 FROM DONHINSMAN@GMAIL.COM	email 14:2	
Sent	M4VIP	W5SAFDR TEST 3 FROM DONHINSMAN@GMAIL.COM WITH COMMAS	email 13:18	
Trash	N4VIP	dhinsma Test 2 from DONHINSMAN@GMAIL.COM WITH SEMICOLONS	email 13:1 🗍	
	🔛 N4VIP	donhins TEST 1 ON 6 JAN	email 11:5	
	M4VIP	donhins TEST PM BRAVO	email 16:17	
	M4VIP	dhinsman PM TEST ALFA	email 15:50	
	M4VIP	dhinsman PM TEST	email 15:38	
	🔛 N4VIP	dhinsma 2nd test to 3 emails	email 15:3	
	🕍 N4VIP	EOC MEMO TEST 2	тето 10:0	
	🕍 N4VIP	W5SAF MEMO TEST	тето 10:0	
	🔛 N4VIP	W5SAF MEMO TEST	memo 09:5	
	🙆 N5BGC	n5bgcdr Test	email 16:3	
	🙆 N4VIP	dhsfares Test 1 on 16 Dec	email 16:0	
	🙆 N4VIP	WL2K:KE Test from N4VIP	email 20:0	
	🙆 N4VIP	WL2K:N Test D-RATS Net	email 19:4	
	🙆 KESOQD	KE50QD test	email 19:3	
	🖂 Alan Hi	Donald Hi EMAIL: Re: D-STAR	email 16:31	
	🙆 N4VIP	WL2K:N Test 7	email 14:3	My Status
	🙆 N4VIP	WL2K:N Test 6	email 14:3	Online
	应 N4VIP	WL2K:dh Test 5	email 14:3	Online (D-RATS)

- WinLink 2000 System (WL2K) RMS stations or CMS servers using New>email (Email Message)
   Sends an email to the WL2K server defined in your Preferences>Messages
  - Note: You must have a registered WL2K email address, e.g. <u>N4VIP@winlink.org</u>
  - Note: So you must be a ham
  - In order for D-RATS to know this is a WL2K email and not a normal email, you must preface the email address with WL2K:

😰 D-RATS: N4VIP	
Eile View Help	
Messages Chat Files Event Log	Stations (2)
	W5SAF
New Forward Reply Delete Email Message	W5MPZ-R (16m)
Drafts Sender 4 Rec 🔐 🗞 🍉 4 Type 4 Dr	ite 🔻
Inbox Save Send Send via Print email 1	:50
Email Message	_
E Sent	
Source Callsign N4VIP	
Destination Callsign WL2K:N4VIP@winlink.org	
Subject WL2K Email #2	
Message In order for the "Destination" to read the WL2K email, he/she must have access to the WL2K System	
In order for the Destination to read the WLIX email, he/she must have access to the WLIX System (HF, VHF or telenet)	
Untitled 73 de N4VIP on D-RATS	
Attachments	My Status
Path	Online 💌
	Online (D-RATS)
	N4VIP

Winlink 2000 (WL2K) is a worldwide system of volunteer sysops, radio stations and network assets supporting e-mail by radio, with non-commercial links to internet e-mail. The system provides valuable service to <u>emergency communicators</u> and to licensed radio operators without access to the internet. You must hold an Amateur Radio license or be a member of a supported organization or agency to use the Winlink 2000 system. Usage and software is free for all who qualify.

RMS Express 1.2.20.0 - N	N4VIP	-	-	6	_	-	
N4VIP - Fi	les Message Attachm	ents Move To:	Saved Iter	ms 🔻	Delete Oper	n Session: Telne	t WL2K 🛛 👻
Logs Help							
🗋   🖨 🏠 🖉   🏝   🕂	🗏 눈 🛃 🎒 ≫	0					
No active session							
System Folders	Date/Time 👻	Message ID	Size	Source S	ender	Recipient	Subject
Inbox	2014/01/06 21:54	D145446N4VIP	226	N4	4VIP	N4VIP	WL2K Email #2
Read Items Outbox	2014/01/06 21:50	D145015N4VIP	204	N4	IVIP	N4VIP	WL2K email
Sent Items						1	
Saved Items							
Deleted Items							
Drafts							
Personal Folders							
	Message ID: D14544	6N4VIP					
	Date: 2014/01/06 2	21:54					
	From: N4VIP						
	To: N4VIP Source:						
	Subject: WL2K Emai	1 #2					
Contacts	In order for the '	'Destination	" to re	ad the WL	2K email,	he/she must	have
AG5S	access to the WL2F	( System (HF	, VHF o	r telenet	)		
k5sca@arrl.net							
KC5WDV KF5AVG							
N4VIP							
W5SAF 🔟							M

This is the RMS Express Window for N4VIP using Telnet WL2K.

- 7. MAP including Map Downloader
- Map Downloader
  - Must define Map Storage Path (Preferences>Paths)
  - Must run Map Downloader one time
    - Enter your latitude, longitude and max zoom 15, then Start
    - Download takes a long time and puts maps into your Map Storage Path
- Map (View, Map), drag as wide as possible and height to your screen
- Note: Stations (My station N4VIP) selected with zoom 15





Map (continued) SFARES QTHs (all the QTHs for SFARES members) selected and zoom 10

Key NM SAR Ham Repeaters selected and zoom 8



Map (continued)

Key NM SAR ham repeaters selected, zoom 8 and mouse hovering over Farmington ARES repeater Note: Info – 146.850 - .600 100 State Police Dist 10



Summary

• Map provides positional awareness and information. Can see where all online stations are and can see where resources are.

Map (continued)

D-RATS can import ".csv" files containing static lists of positional information (i.e.: Hospitals, Repeater Sites, EOCs, etc) that can be displayed on the D-RATS Map.

See "D-RATS Creating Static Overlays.pdf" for instructions

View of Key NM SAR Ham Repeaters.csv

					Key NM SAR H	Ham Repeaters	.csv - Micr	osoft Excel												
Home Insert Pag	e Layout	Formulas (	Data Review Vi	ew															0	
Cut Calibi		11 × A A	= = - >-	Wrap Text	General *			Normal		Bad	G	bod		+	-	H###	Σ AutoSur		m	
Copy															÷٢	للتجهد	😺 Fill *		ara -	
Paste V Format Painter	ζ <u>υ</u> - 🚟	- 🔗 - <u>A</u> -		Merge & Center *	\$ - % <b>,</b> 30 -00	Conditional Formatting		Neutral		Calculation		neck Cell		Insert	Delete	Format	🧟 Clear 🔹	Sort & Filter * 1		
Clipboard 54	Font	6	Aligr	iment 🕫	Number 🕫				Sty	les					Cells			Editing		
A1 - 💿	f <sub>x</sub> P	ajarito Mt																		
A	В	С	D E	F		G	н	1	J	К	L	М	N		0	Р	Q	R	S	
1 Pajarito Mt	/r	35.883	-106.417	145.190600 none St	ate Police Dist 5	TRUE														
2 Tesuque	/r	35.78586	-105.732	146.820600 162.2 St	ate Police Dist 1	TRUE														
3 Los Alamos	/r	35.88	-106.383	146.880600 none St	ate Police Dist 1	TRUE														
4 Tesugue - ARES	/r	35.78586	-105.782	147.020 +.600 141.3 St	ate Police Dist 1	TRUE														
5 St. Vincent Hospital	/r	35.65833	-105.948	147.200 +.600 162.2 St	ate Police Dist 1	TRUE														
6 Elk Mt. MegaLink	/r	35.767	-105.508	147.260 +.600 67.0 Sta	te Police Dist 1	TRUE														
7 Elk Mt	/r	35.767	-105.558	147.300 +.600 162.2 St	ate Police Dist 1	TRUE														
8 Turkey Mt. ARES	/r	35.98419	-104.904	145.370600 141.3 St	ate Police Dist 2	TRUE														
9 Raton	/r	36.833	-104.333	145.490600 100.0 St	ate Police Dist 2	TRUE														
L0 Sierra Grande	/r	36.7075	-103.827	146.850600 100.0 St	ate Police Dist 2	TRUE														
1 Touch-Me-Not Mt. ARES	/r	36.55975	-105.195	147.040 +.600 141.3 St	ate Police Dist 2	TRUE														
12 Sierra Grande ARES	/r	36.70559	-103.877	147.175 +.600 141.3 St	ate Police Dist 2	TRUE														
13 Turkey Mt. MegaLink	/r	35.98419	-104.854	147.200 +.600 67.0 Sta	te Police Dist 2	TRUE														
14 Sierra Grande MegaLink	/r	36.70559	-103.927	147.280 +.600 100.0 St	ate Police Dist 2	TRUE														
L5 Angel Fire	/r	36.37267	-105.23	147.340 +.600 No Ton	e State Police Dist 2	TRUE														
16 Iron Mt. MegaLink	/r	36.61883	-105.218	444.350 +5 100.0 State	Police Dist 2	TRUE														
17 Caudill Ranch ARES	/r	33.37536	-103.721	145.250600 141.3 St	ate Police Dist 3	TRUE														
18 Maljamar MegaLink	/r	32.86667	-103.756	147.140 +.600 67.0 Sta	te Police Dist 3	TRUE														
19 Caprock	/r	33.37536	-103.771	147.180 +.600 100.0 St	ate Police Dist 3	TRUE														
20 Rosewell MegaLink	/r	33.39717	-104.376	147.260 +.600 100.0 St	ate Police Dist 3	TRUE														
21 Carlsbad	/r	32.47561	-104.196	147.280 +.600 123.0 St	ate Police Dist 3	TRUE														
22 Queen	/r	32.19408	-104.739	147.300 +.600 123.0 St	ate Police Dist 3	TRUE														
23 Loving	/r	32.26364	-104.102	147.360 +.600 123.0 St	ate Police Dist 3	TRUE														
24 Hope	/r	32.78267	-104.71	147.380 +.600 123.0 St	ate Police Dist 3	TRUE														
25 Artesia	/r	32.795	-104.213	442.450 +5 162.2 State	Police Dist 3	TRUE														
26 W5COW - FLETC	/r	32.833	-104.667	444.975 +5 156.7 State	Police Dist 3	TRUE														
27 Dark Canyon Megalink	/r	32.07733	-104.738	449.275 -5 67.0 State	Police Dist 3	TRUE														
28 W7DXX	/r	32.26667		147.380 +.600 100.0 St		TRUE														
29 Las Cruces MegaLink	/r	32.56667	-106.767	147.180 +.600 100.0 St	ate Police Dist 4	TRUE														
30 Mt Franklin MegaLink	/r	31.9028		147.200 +.600 67.0 Sta		TRUE														
31 Cedro Peak ARES	/r	35.05284	-106.352	145.150600 100 Stat	e Police Dist 5	TRUE														
32 Eureka Mesa ARES	/r	36.01336	-106.844	145.175600 141.3 St	ate Police Dist 5	TRUE														
Key NM SAR Ham R	epeaters 🦯	2																		

Map (continued)



8. RF Segment with D-STAR radios

First, need to add a new "Radio" in Preferences, click Add then (Use "D-RATS Part IV for D-STAR setup V2.DOC"

Name	ICOM	
Туре		•
A D-STA	R radio connected to a serial p	ort
	Parameters	
Serial Port	COM4	•
Baud Rate	9600	•

COM port should be a number 4 or less! Baud rate should be 4800 for ID-31A, 9600 for 2820 and 880H. COM port can be seen in Device Manager, use orange cable connection between computer and D-STAR radio

🕫 Config						23
Preferences	Enabled 4	Port	<ul> <li>Settings</li> </ul>	Sniff ◀	Raw Text 4	Ni
Paths		net:xylene.no-ip.biz:9000				Α
GPS		dongle:				D'
Appearance		net:ae5he.ham-radio-op.net:90	00			EI
Chat		net:rat.gaares.org:9000				G.
Sounds		net:georgiadstar.dyndns.org:90	00			G.
Messages	V	COM4	9600			IC
🔳 Radio		net:k3pdrrats.dyndns.org:9000				ĸ
Transfers		agwpe:localhost:8000				P١
Network		net:ref.d-rats.com:9000				R
TCP Gateway		tnc-ax25:COM7:7:	9600	1		T!
TCP Forwarding		net:W5MPZ.ORG:9000				w
Outgoing Email						
Email Accounts					Delete	
Email Access		Add	dit		Delete	
			<u>S</u> av	/e	<u>C</u> ancel	

Check enabled for "ICOM" (or however you labeled it) Click Save (only enable the radio for initial checkout)

D-Star radio must have low-speed data settings. For example, GPS must be turned off since the lowspeed data goes into the same frames as GPS. Chapter 4 in the ID-31A Advanced Instructions show the various menu settings required for low-speed data transmission. For other D-Star radio, search your manual for "low-speed data". For the ID-31A, the settings are:

Set the "GPS SELECT" option to "OFF", (MENU > GPS > GPS Set > **GPS Select, OFF**) Set the "GPS OUT" option to "OFF", (MENU > GPS > GPS Set > **GPS Out, OFF**) Set the "GPS TX Mode" option to "OFF",(MENU > GPS > **GPS TX Mode, OFF**) Configure the serial data communication software as follows.

- Port : The COM port number which is used by the ID-31A/E.
- Baud rate : 4800 bps
- Data : 8 bit
- Parity : None
- Stop : 1 bit
- Flow control : Xon/Xoff

Function > DATA SPEED > 4800

For the ICOM 880H, the settings for low-speed data are:

GPS Tx Off

MENU (R&S) > GPS > (P&S), GPS Tx OFF

DATATX AUTO

MENU > (P&S) > DV SET > MONI (R&S) > DATATx > MONI > AUTO > MONI > MENU

Where R&S means rotate the left dial and select, P&S means push the left dial and select.

RF Segment with D-STAR radios (continued)

Now must setup D-STAR radio For initial checkout, use Simplex

- Pick a repeater frequency and then change offset to 0.0000 (remember to reset after checkout)
- b. Set power output to Low or SLOW.

Test with only one radio

CHAT>Right Click Station Pane>Clear All Right Click Station Pane>Ping All Stations (should see your radio transmit) If radio transmits, proper setup

Test with two radios and D-RATS (perform on both radios)

CHAT>Right Click Station Pane>Clear All

Right Click Station Pane>Ping All Stations on both (should see both radios transmit) Should see other stations call sign in Station Pane but not yours (never yours) If both Station Panes show other station, RF Segment now established



RF Segment with D-STAR radios (continued)

NOTE: WHEN IN THE RF SEGMENT AND USING A D-STAR RADIO, YOU MUST BE A HAM AND CALL SIGN IN D-RATS MUST BE REGISTERED! IN SIMPLEX, IT WILL WORK WITHOUT A CORRECT CALL SIGN BUT YOU ARE VIOLATING FCC RULES. TO USE A REPEATER OR REFLECTOR, CALL SIGN MUST BE REGISTERED AT ONE (AND ONLY ONE) D-STAR REPEATER. ONCE REGISTERED IN A D-STAR REPEATER, THE US TRUST SYSTEM VERIFIES THAT YOUR CALL SIGN IS LEGITITMATE BEFORE ALLOWING YOUR D-STAR RADIO TO TRANSMIT THROUGH ANY REPEATER OR THROUGH A REPEATER AND INTO A D-STAR GATEWAY, I.E. INTO THE INTERNET.

Once RF Segment established, you can do anything in the RF Segment you can do via internet, i.e. CHAT, FILES, MESSAGES. However, you must have a good RF link. To check RF link between two stations, you should select the Call Sign in the Station Pane, right click and Test Connectivity.

#### RF Segment with D-STAR radios (continued)

O -RATS: N4VIP	
<u>File View H</u> elp	
Messages Chat Files Event Log	Stations (1)
Add Filter Remove Filter Join Channel Open Private Chat D-RATS vdaily-02232012 Copyright 2012 Dan Smith (KK7DS) [2014-01-14 07:54:11] [WSPMZ] WSMPZ-R: [QST] Albuquerque, New Mexico: 34 F (1 C) (Tue, 14 Jan 2014 14:52:00 GMT) [07:54:23] N3TSZ: Now Online: QRV (Port W5PMZ) [2014-01-14 08:25:12] WSSAF: Now Online: Online (D-RATS) (Port ICOM) [08:25:50] [ICOM] WSSAF: [QST] Santa Fe, New Mexico: 28 F (-2 C) (Tue, 14 Jan 2014 14:53:00 GMT) [08:43:55] WSSAF: Now Online: Online (D-RATS) (Port ICOM) [08:44:10] WSSAF: Now Online: Online (D-RATS) (Port ICOM) [08:53:07] [ICOM] WSSAF: [QST] Santa Fe, New Mexico: 28 F (-2 C) (Tue, 14 Jan 2014 14:53:00 GMT) [08:54:52] WSSAF: Now Online: Online (D-RATS) (Port ICOM) [08:53:07] [ICOM] WSSAF: [QST] Santa Fe, New Mexico: 28 F (-2 C) (Tue, 14 Jan 2014 14:53:00 GMT) [08:54:52] WSSAF: Now Online: Online (D-RATS) (Port ICOM)	Ping         Test Connect         Request Posi         Send file            Get version         Request mai            Remove            Reset            Clear All         Ping All Stati         Request all p
Main ICOM  Quick Messages QSTs Send Konnectivity Test	My Status Online Online (D-RATS) N4VIP
Run Test -Status	
-Statistics Sent Received Total Packets Bytes	
Start	
<u>B</u> ack <u>Apply</u> <u>Cancel</u>	

Click Start, 10 packets are sent and received and at the end of 10 you will receive a percentage. 70% is OK, 80% is better and 100% is a very good link. 80% or better should allow the RF segment to function properly.

# 9. Trouble shooting

- 1. General
  - a. The D-RATS download is for a 32 bit Windows operating system. If your Windows operating system is 64 bits, you must install a 64 bit version of lzhuf\_1.exe in your Program Files\D-RATS\libexec folder. The 64 bit version is 30K big while the 32 bit version is 29K.
- 2. CHAT
  - a. Nothing in the Station Pane
    - i. check Preferences to ensure you have checked the correct "Radio"
    - ii. check lower left CHAT pull down to see that you have selected the correct Radio
    - iii. Right click in Station Pane to Ping All Stations
    - iv. If nothing above works, check to see if you are connected to Internet
  - b. Other stations not receiving your sent Chats
    - i. Check that you are sending to the correct "Radio", check lower left pull down
  - c. Don't see chats in Main Window
    - i. Check for filter or channel window, remove filter if necessary
- 3. FILES
  - a. Don't see your list of shared files, check Preferences to be sure File Transfer Path is defined
  - b. Don't see a list of shared files for other station, check Port and Station Name show in upper right pull downs and that you have connected
- 4. MESSAGES
  - a. FOR ALL TROUBLES WITH MESSAGES, FIRST CHECK THAT YOU CAN SEND OUT AN EMAIL TO YOURSELF (GOES TO OUTBOX) AND RECEIVE IT BACK (GOES INTO INBOX). IF THIS DOESN'T WORK, NOTHING WILL
  - b. ALSO CHECK THAT YOU ENTERED YOUR CALL SIGN IN EMAIL ACCESS IN PREFERENCES
  - c. Messages sit in the Outbox but don't go out, check that you have entered correct name and password for SMTP (Outgoing Email in Preferences)
  - d. Nothing appears in the INBOX when you are certain traffic has been sent to you, check that you have entered correct name and password for POP (Email Accounts in Preferences)
  - e. WL2K messages don't leave the Outbox, check that you prefaced email with WL2K:
- 5. MAPS
  - a. No Data appears when you use the Map Function, have you made your initial Map Download?
  - b. Overlays that you have created or are using don't show, ensure that the Overlay is checked in the lower left pane.
- 6. RF Segment
  - Low speed data communications
    - GPS must be turned off (there are several settings depending on ICOM model)
    - Data TX must be Auto (NOT PTT)
  - Test connectivity, 80% or better between stations is necessary

#### 10. Resources

- 1. D-RATS Training Farmington.DOC
- 2. Gmail accounts for D-RATS.TXT
- 3. WINLINK accounts for D-RATS.TXT
- 4. D-RATS\_Operating\_Guide\_Addendum\_02232012.PDF
- 5. Email showing up in you Outbox in D-RATS.DOC
- 6. D-RATS&GmailIV.PDF
- 7. D-RATS configuration Part I Rev 1.DOC
- 8. D-RATS configuration Part II Rev 1.DOC
- 9. Key NM SAR Ham Repeaters.CSV
- 10. D-RATS Creating Static Overlays.PDF
- 11. D-RATS Installing spelling support.PDF
- 12. D-RATS\_and\_packet\_radio-The\_Third\_Way.PDF
- 13. D-RATS\_Basic\_E-mail\_Procedures.PDF
- 14. D-RATS\_operating\_guide\_0.3.3.PDF
- 15. D-RATS Part IV for D-STAR setup V2.DOC