



D-Star Hotspot and GMSK DV Node Adapter

Scott Currie

NS7C

ns7c@comcast.net



Overview

What is it?

D-STAR Hot Spot is software for Windows that creates a D-STAR 'point of presence' (or hot spot) utilizing an analog radio and a GMSK DV node adapter. The hot spot creates RF access to the D-STAR network where none previously existed. With a hot spot set up, you can use your D-STAR radio (IC-92AD, etc.) to listen to, and talk on, any D-Plus equipped D-STAR repeater or reflector.

This is similar in concept to a analog Echolink or IRLP simplex link.



Overview

- GMSK DV Node Adapter board and firmware by Satoshi Yasuda, 7M3TJZ
- D-Star Hotspot Windows software by Mark McGregor, KB9KHM



Overview

Q: Do I need a DVDongle?

A: NO, AMBE encode and decode is done in the users D-Star radio.

Q: With a hot spot, can I access the D-STAR network with an analog radio?

A: NO - You must use a D-STAR radio in digital voice mode with D-STAR hot spot. The analog radio is only the RF deck for the Node Adapter.

Q: Can I use D-STAR Hot Spot to link with Echolink or IRLP?

N: NO - Hot Spot only works with D-STAR radios in digital voice mode.

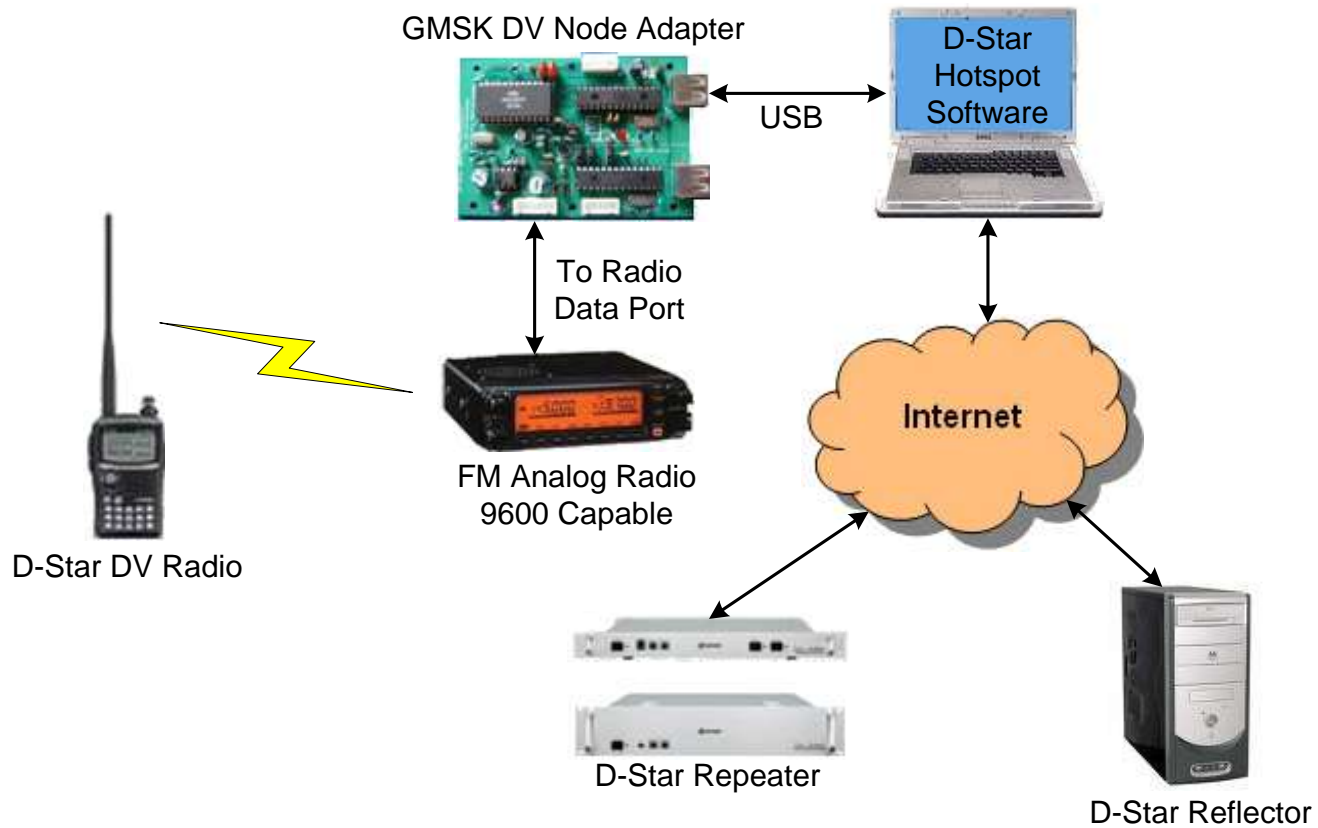
Q: Does call sign or slash routing work with D-STAR Hot Spot?

N: NO - D-STAR Hot Spot talks to gateways running DPlus. Call sign and slash routing are not supported by Hot Spot.



Overview

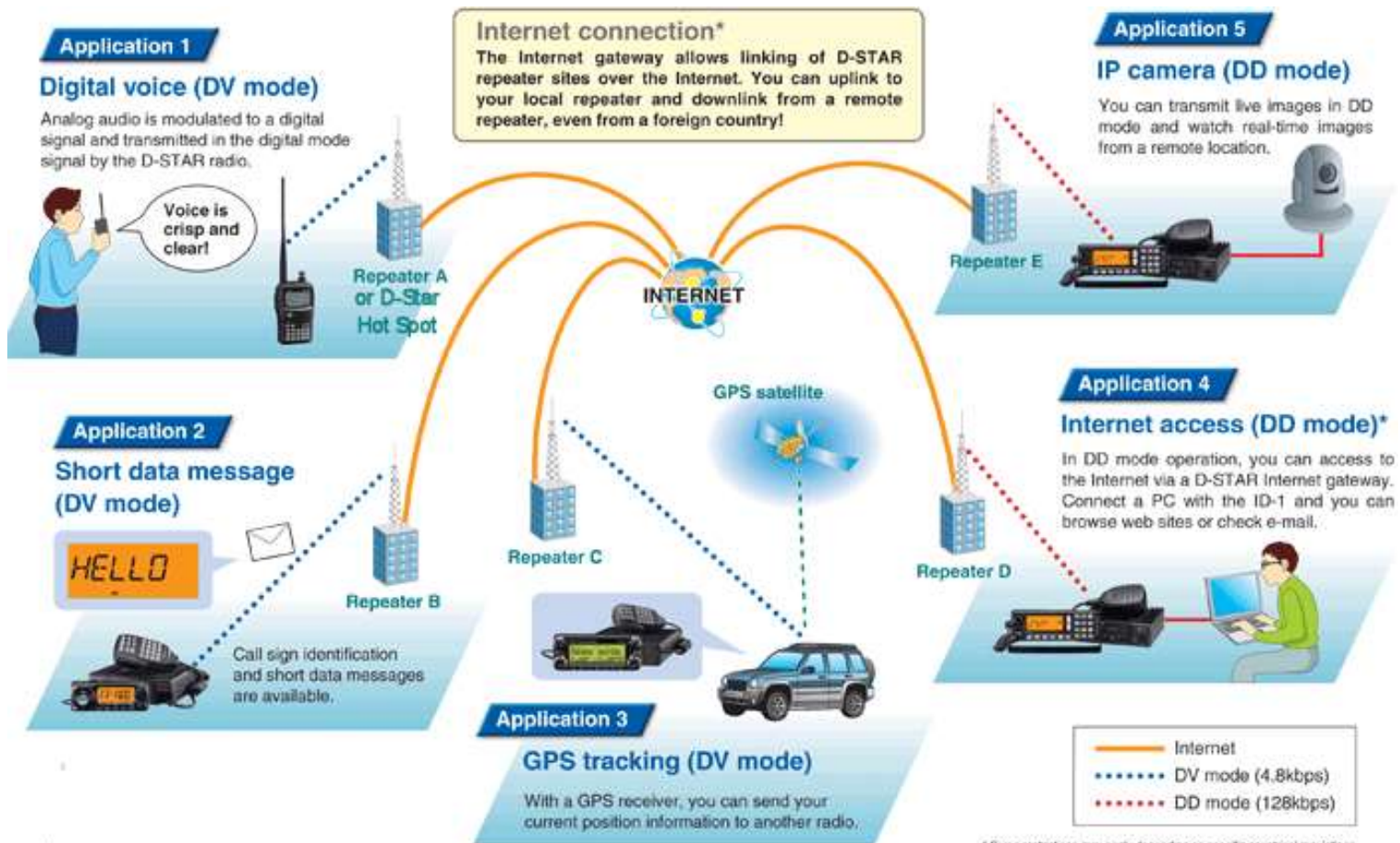
D-Star Hotspot System Diagram





Overview

Where does it fit in?

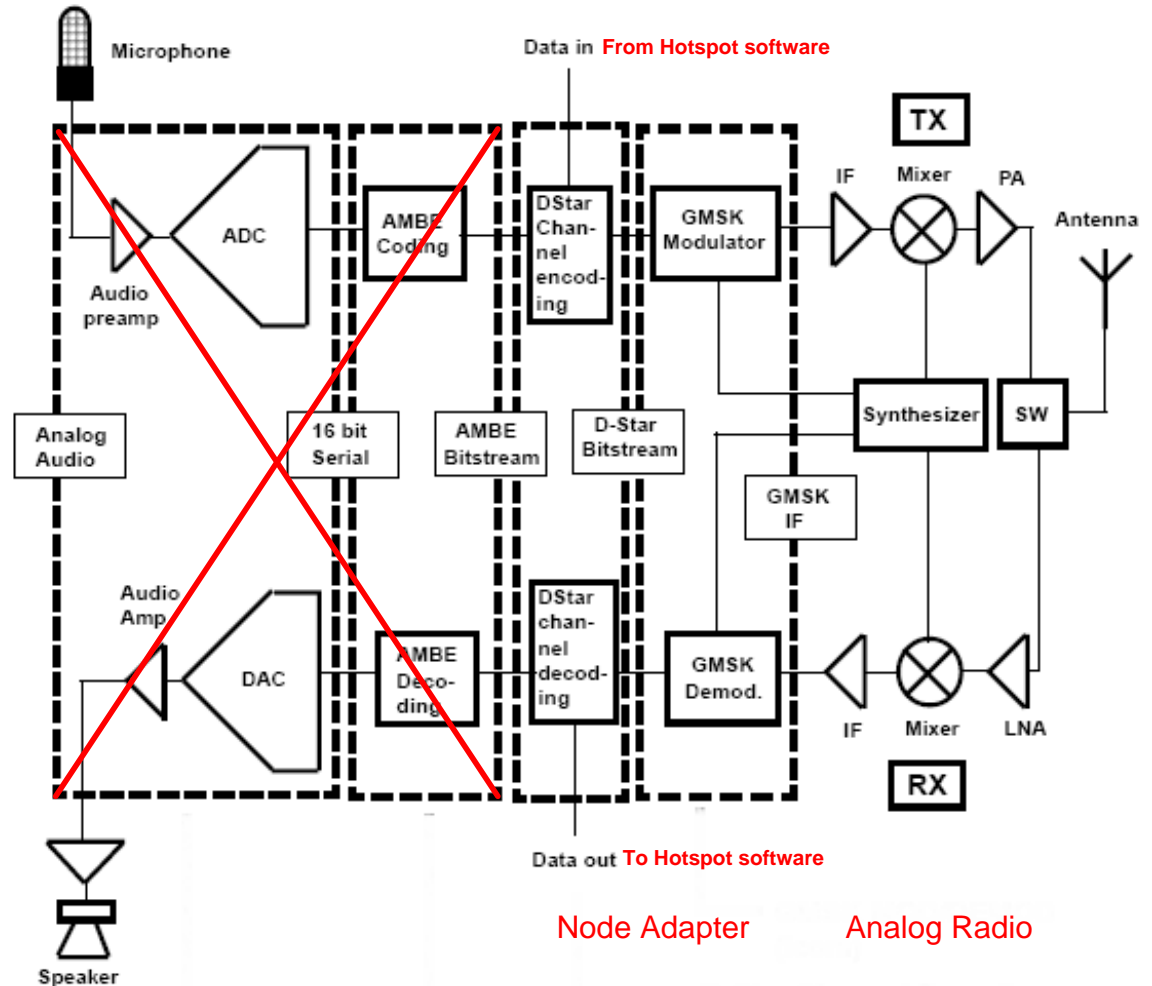


* Some restrictions may apply depending on specific countries' regulations.



Overview

D-Star Radio
Block Diagram
With relation to
Node adapter
concept





Overview

Hotspot Software Screenshot

D-STAR Hot Spot

File DVR Edit Help

Gateway: REF001 C ■

Address: 66.151.17.198:20001
Connection Status: Connected

WA7FW B REF001 C W4RNT B WA7FW C Disconnect

GMSK Node Adapter ■

Status: D-STAR Interface V04.06 7M3TJZ/AD6GZ

Last Gateway User Time: 3/31/2009 8:51:22 AM

MyCall	UrCall	RPT1	RPT2
WB4WTN /BILL	CQCQCQ	REF001 C	WX4GPB G

Message: MOBILE IN GA

Last RF User Time: 3/31/2009 6:36:25 AM

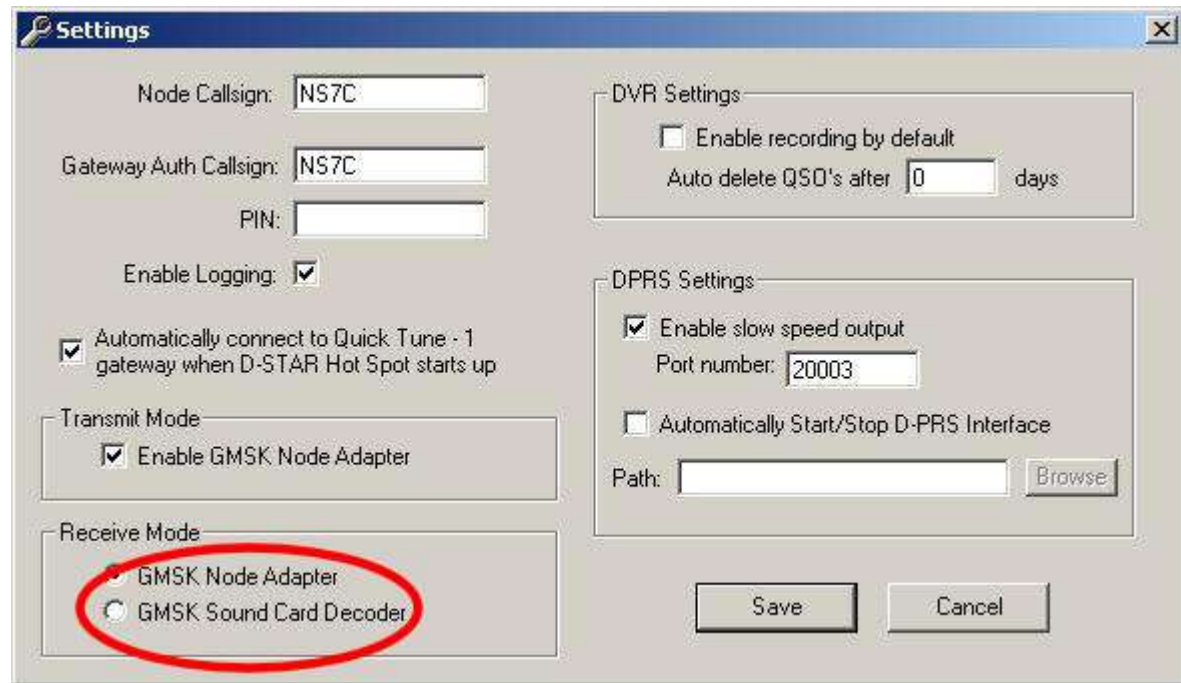
MyCall	UrCall	RPT1	RPT2
NS7C /92AD	REF001CL	DIRECT	DIRECT

Message: D-STAR Hotspot



Overview

Can also operate on the receive side using a Sound Card interface



Newer versions of Hot Spot also include full repeater capability using two transceivers



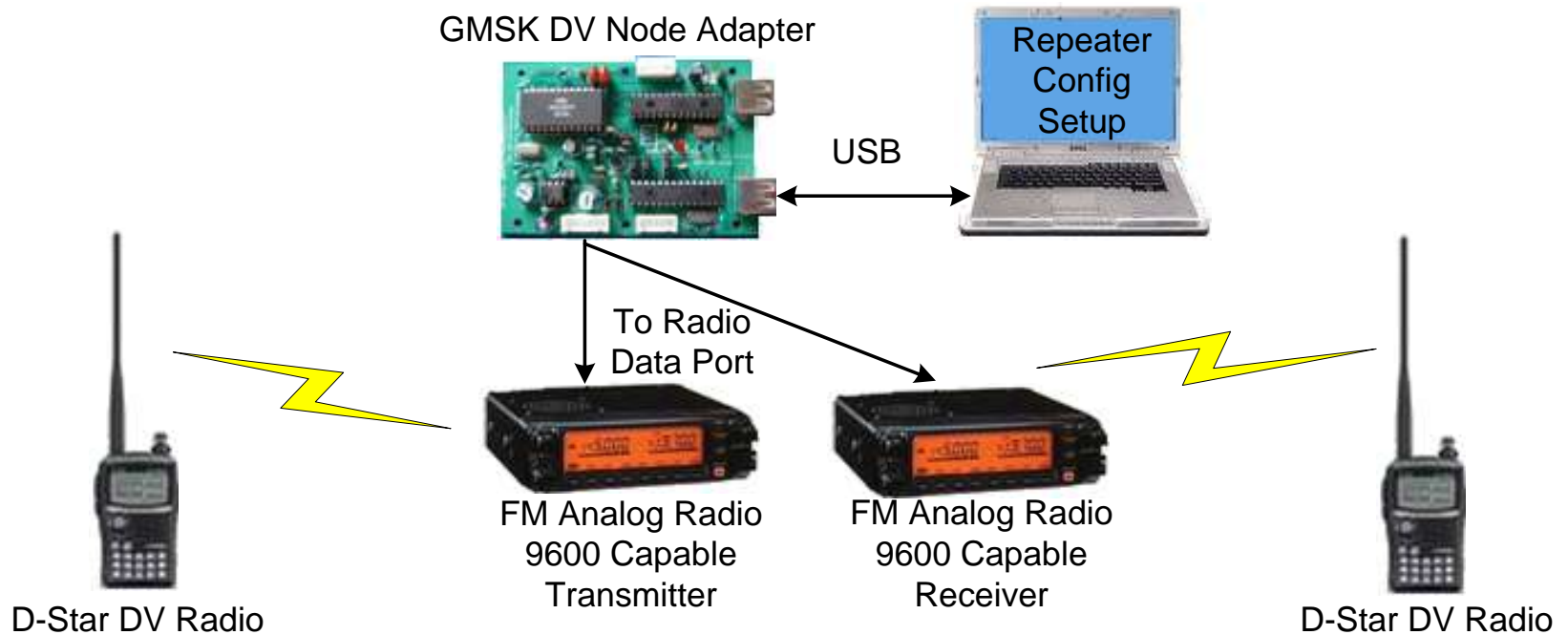
Overview

- **The GMSK DV Node Adapter also supports a standalone repeater configuration**
 - Requires the “option” area components
 - Uses two FM radios, or receiver and transmitter
 - No gateway or network access is provided
 - Computer is only needed for setup



Overview

D-Star Standalone Repeater Diagram





For the D-Star Experimenter

- **This is not a commercial product!**
 - Assembly required, batteries not included
- **Beta level Firmware on Node Adapter**
 - Over 30 new versions since mid February 2009
- **Beta level Software**
 - Currently version 2.28, still has bugs??
- **Limited support**
 - User community on a yahoo group
- **Expect hangs, reboots, etc.**



What Do You Need?

- **Node Adapter board (sold out, new revision coming)**
- **Experience with a soldering iron**
- **A bunch of parts**
 - Mouser, CDI, Alphasatronics
- **Analog FM radio**
 - With a 9600 baud data port preferred
- **PIC Programmer**
- **Several ATU's**
 - And maybe a scope...and a service monitor



Operation

- **Call sign must be gateway authorized**
- **UR set to CQCQCQ**
- **RPT1 and RPT2 not used**
- **D-Plus linking/unlinking supported**
 - Or use the UI on the computer
- **Stay off the UI during operations**
 - Or run minimized
- **Record and playback of RF side available**
- **Keep transmitter duty cycle in mind!**



Legal Considerations

- **Falls somewhere between a simplex link and digital store and forward**
- **Similar to Echolink and IRLP simplex link operations**
- **Stay within the rules, monitor continuously!**



Other Projects in the Wings (non-ICOM D-Star)

- **Full D-Star repeater and G2 gateway**
 - Uses Node adapter and Linux computer
 - By David, G4ULF
 - <http://g4ulf.blogspot.com/>
- **D-Star Speaker/Mic**
 - Connects to an analog radio like the Node Adapter
 - By Howard, G6LVB
- **Dutch*Star Project**
 - D-Star Modem, Terminal and full transceiver kits
 - By Fred N. Van Kempen, PA4YBR
 - <http://www.dutch-star.nl/>



References

- **GMSK DV Node Adapter**
 - <http://d-star.dyndns.org/>
- **D-Star Hotspot Software**
 - <http://w9arp.com/hotspot/>
- **GMSK DV Node Adapter Group**
 - http://groups.yahoo.com/group/gmsk_dv_node/
- **D-Star Development (non-ICOM)**
 - http://groups.yahoo.com/group/dstar_development/



Questions??

Live Demo....