

The G4KLX ircDDB Gateway and Repeater Programs

Presented at
Ham Radio 2012

Who am I?

- Licenced as G8TXQ in 1979, G4KLX in 1980
- HB9DRD between 2000 and 2003
- Started with AX.25 in 1987
- Wrote Linux kernel AX.25, NET/ROM and ROSE protocols (as well as X.25 and LAPB)
- Professional software engineer
- Currently studying HF propagation for my PhD



Development History - 1

- Wanted to put some amateur radio into D-Star
- Sound card based client by mid-2009
- Sound card based repeater a month later
- First operational repeater in August 2009 (GB3IN)

Development History - 2

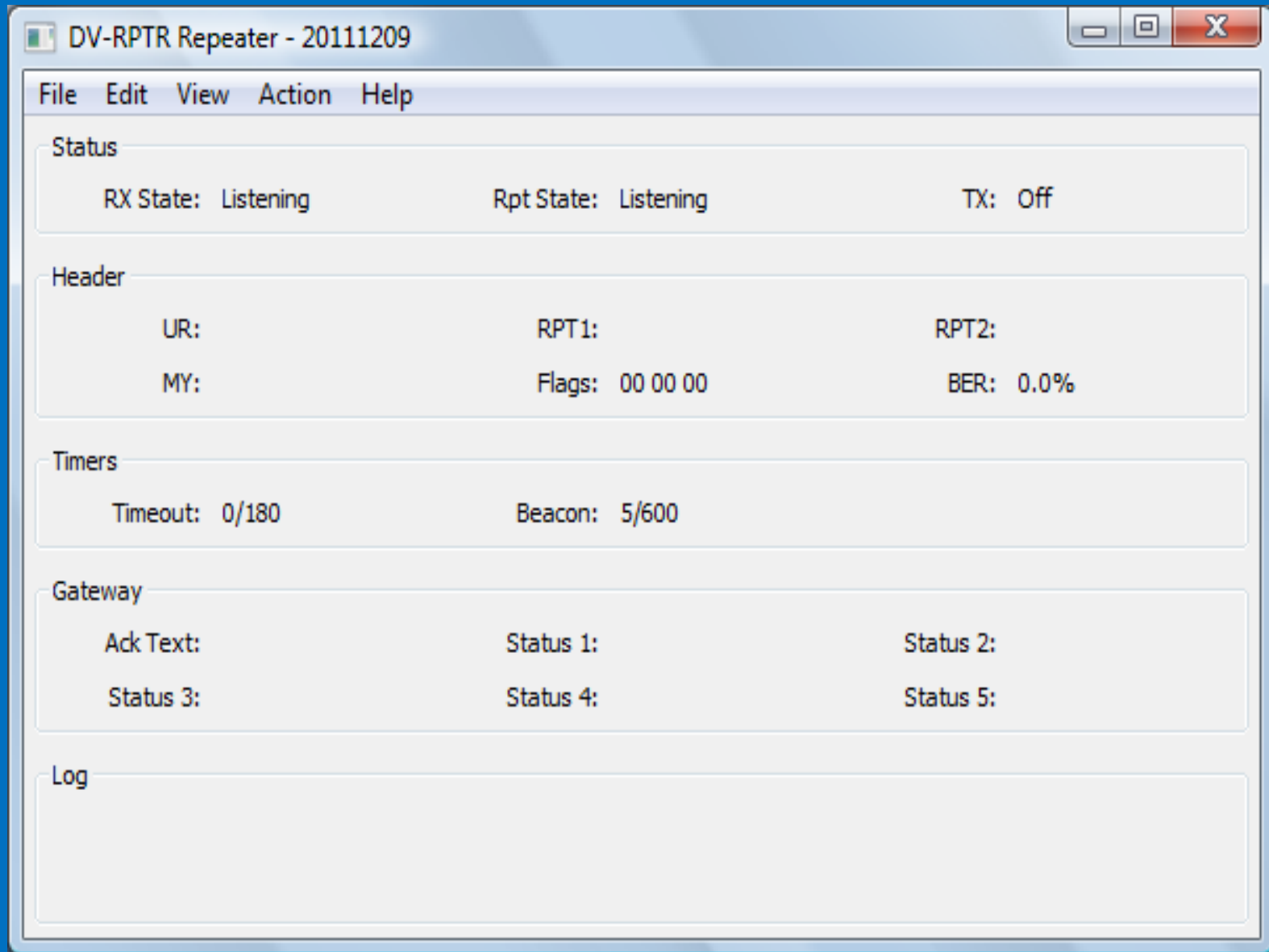
- Integration with Open G2 in late 2009
- GMSK Repeater and ircDDB Gateway in late 2010
- DVAP Node and DV-RPTR Repeater in Summer 2011
- Split Repeater in early 2012

Common Repeater Features - 1

- Multiple modes (simplex, duplex, etc)
- AMBE reconstruction
- DTMF blanking
- Callsign validity checking

Common Repeater Features - 2

- Hidden remote commands
- Intelligent acks
- Voice beacon
- Multiple OS and CPU compatible
- And more.....





ircDDB Gateway

- First approached in Summer 2010 by Jann DG8NGN
- An open and better system than Icom G2
- Chance to create unified open source gateway
- First release in October 2010

ircDDB Gateway Features - 1

- Uses ircDDB for user and repeater queries
- Includes D-Plus, DExtra, and DCS protocols
- Uses opendstar.org for D-Plus validation
- Uses DCS callsign server for DExtra and DCS

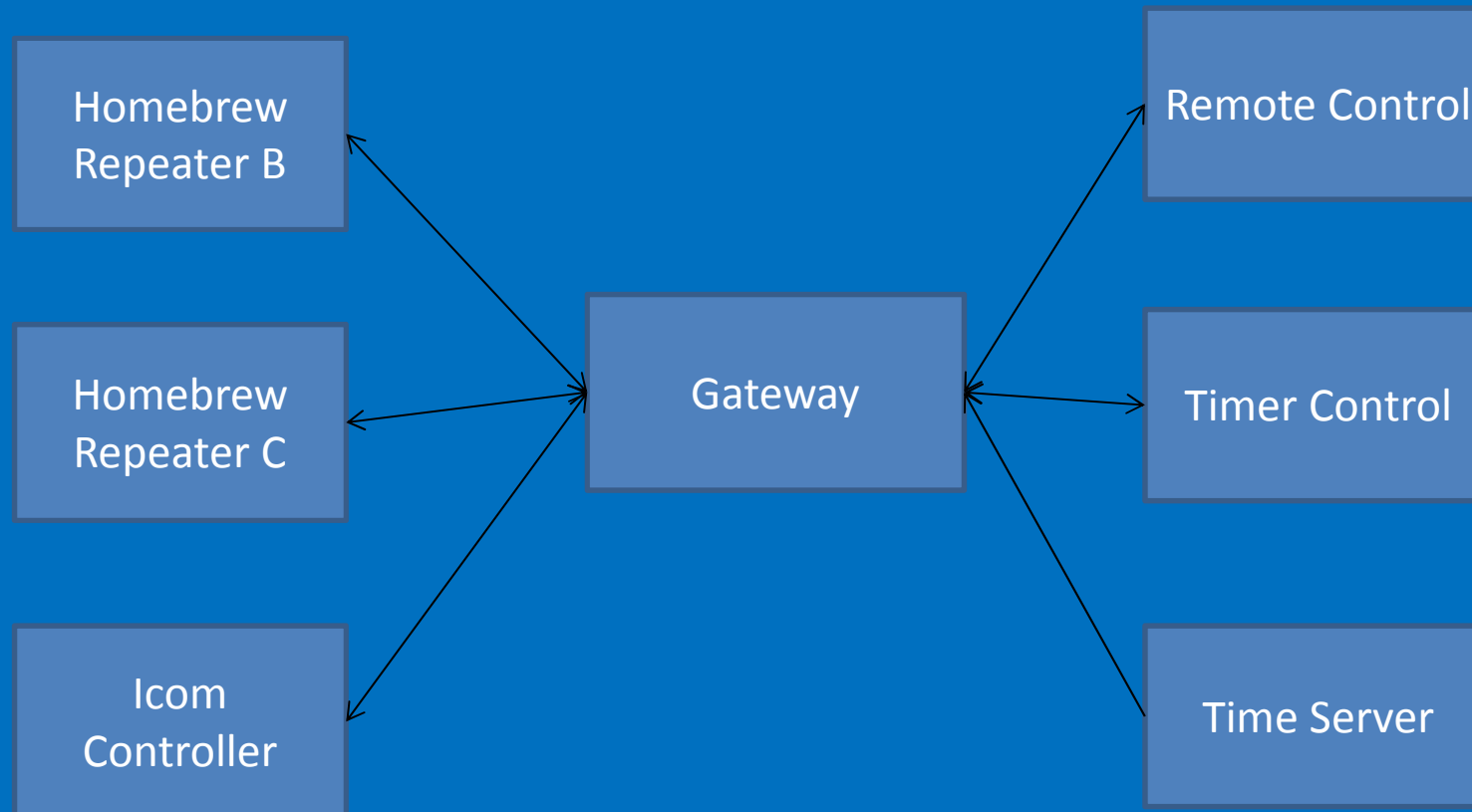
ircDDB Gateway Features - 2

- Gates repeater, GPS, and GPS-A data to aprs.fi
- Allows DTMF link and unlink commands
- Voice status messages
- D-RATS integration

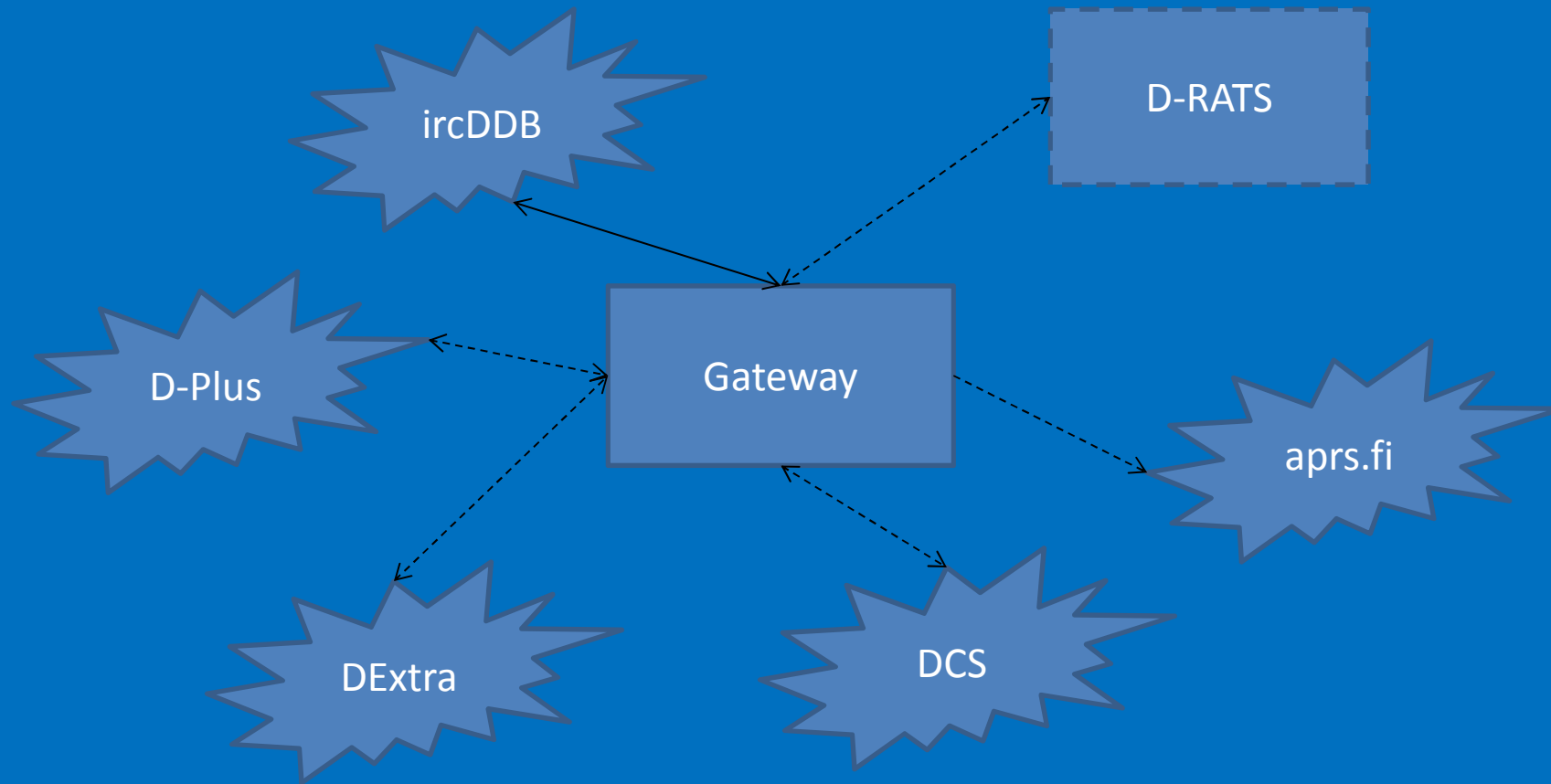
ircDDB Gateway Features - 3

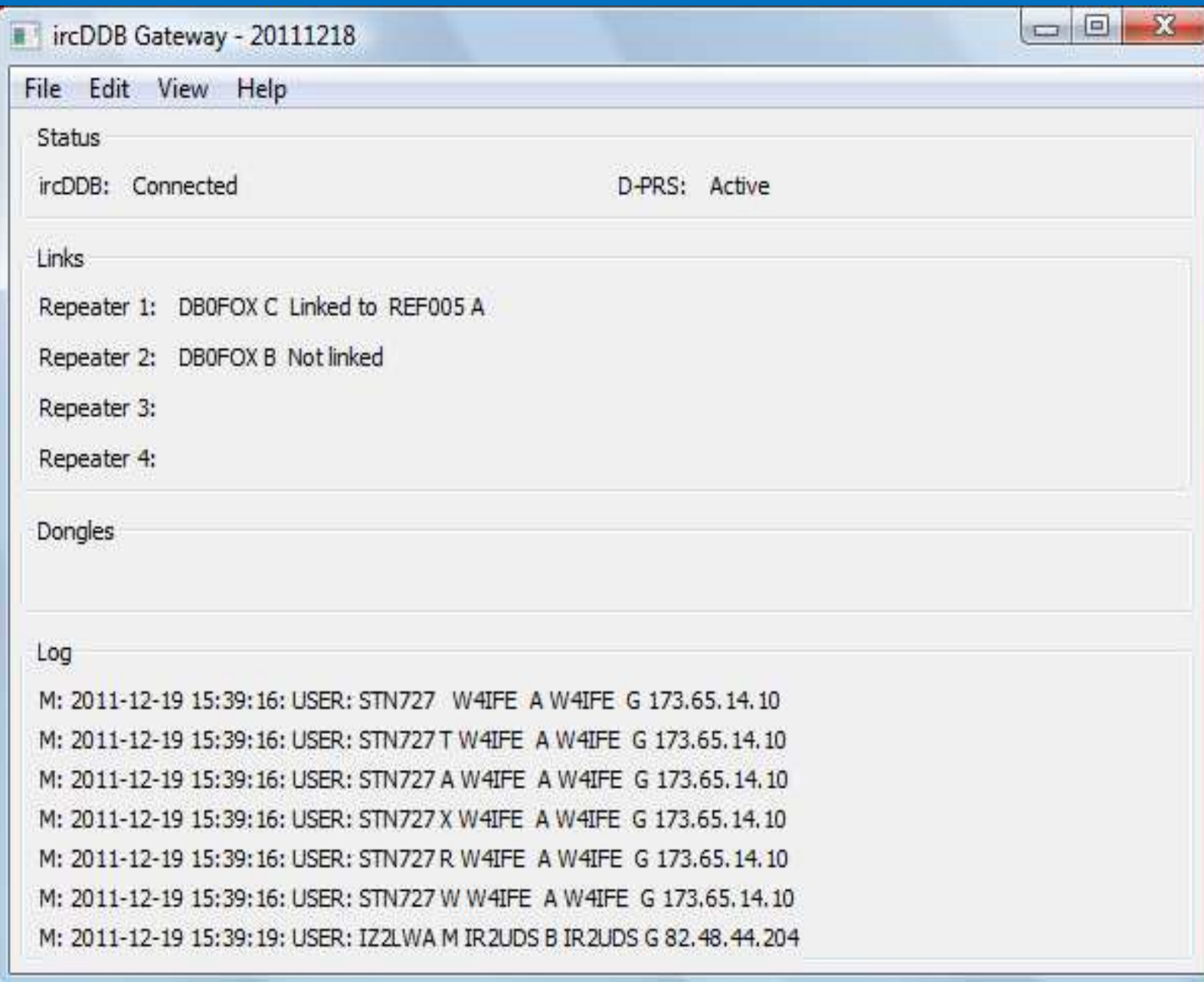
- Allows mix of homebrew and Icom controllers
- Can be used for DD mode
- Includes a STARnet Digital server
- Multiple OS and CPU compatibility
- And more.....

ircDDB Gateway Connections - 1



ircDDB Gateway Connections - 2





ircDDB Gateway - 20111218

File Edit View Help

Status

ircDDB: Connected

D-PRS: Active

Links

Repeater 1: DB0FOX C Linked to REF005 A

Repeater 2: DB0FOX B Not linked

Repeater 3:

Repeater 4:

Dongles

Log

M: 2011-12-19 15:39:16: USER: STN727 W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:16: USER: STN727 T W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:16: USER: STN727 A W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:16: USER: STN727 X W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:16: USER: STN727 R W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:16: USER: STN727 W W4IFE A W4IFE G 173.65.14.10
M: 2011-12-19 15:39:19: USER: IZ2LWA M IR2UDS B IR2UDS G 82.48.44.204

The screenshot shows a Windows XP desktop with several software windows for ham radio operations. The desktop background is blue with various icons. The taskbar at the bottom shows the Start button and several open applications.

Remote Control - GB7WB - 20120423

Callsign	Protocol	Direct...	Type
DCS005 B	DCS	OUT	Repeater

ircDDB Gateway - GB7WB - 20120423

Status: ircDDB: Connected D-PRS: Active

ircDDB Gateway - GB3WB - 20120423

Status: ircDDB: Connected D-PRS: Active

ircDDB Gateway - GB3WE - 20120423

Status: ircDDB: Connected D-PRS: Active

Links:

- Repeater 1: GB3WE C Linked to DCS005 A
- Repeater 2:
- Repeater 3:
- Repeater 4:

DV-RPTR Repeater - GB7WB - 20120420a

Status: RX State: Listening Rpt State: Listening

Split Repeater - GB7WB - 20120420a

Status: State: Network

Header:

UR: CQCQCQ RPT1: GB7WB G
MY: G7EBY /NEIL Flags: 00 00 00

Timers:

Timeout: 0/300 Beacon: 0/300

DV-RPTR Repeater - GB3WE - 20120420a

Status: RX State: Listening Rpt State: Listening TX: Off

Header:

UR: RPT1: RPT2:
MY: Flags: 00 00 00 BER: 0.0%

D-Star Repeater - GB3WB - 20120420a

Status: Listening TX: Off

58.52

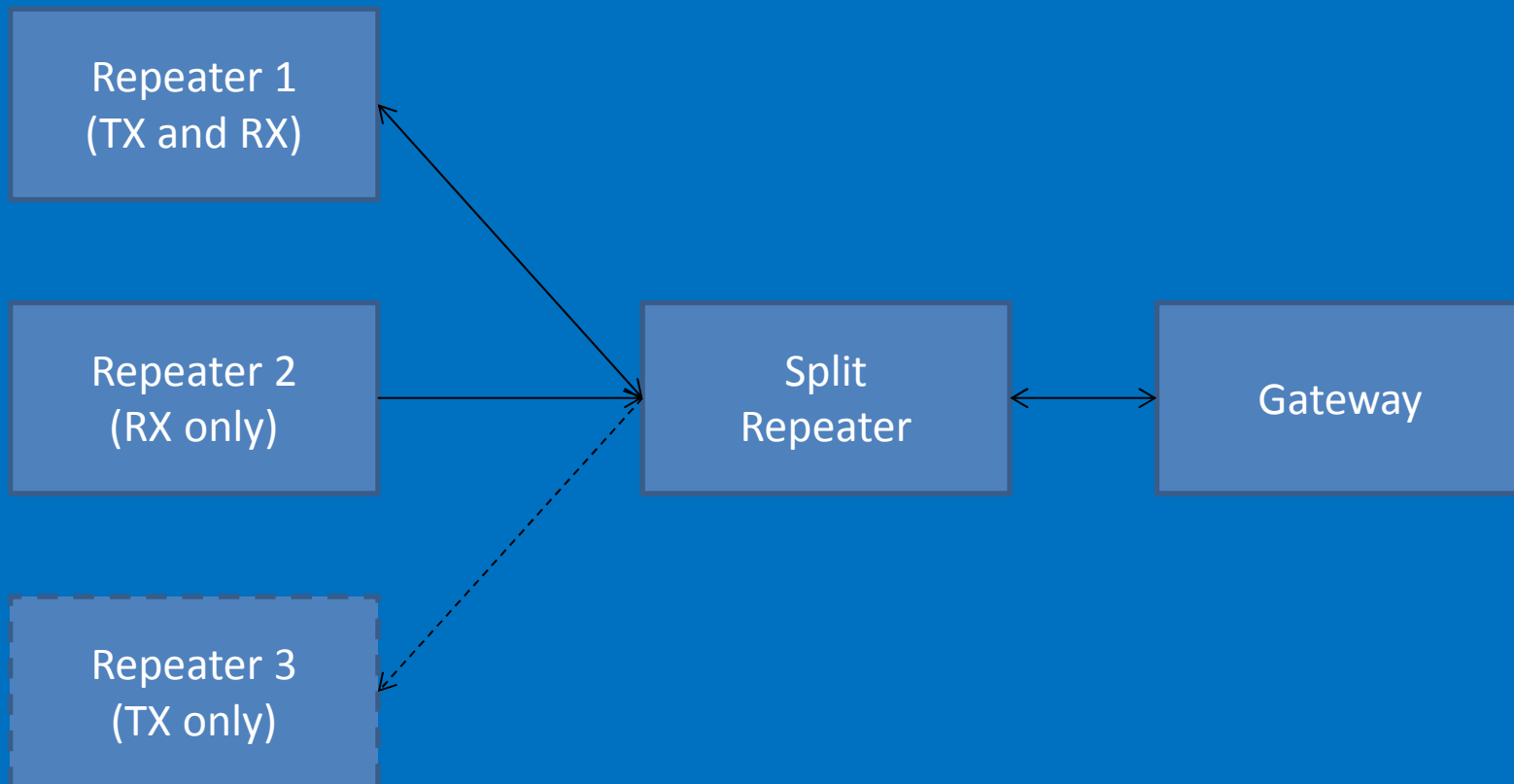
RPT2:
BER:

Taskbar: start | ircDDB_UDP_Re... | ircDDB Gatawa... | ircDDB Gatawa... | ircDDB Gatawa... | DV-RPTR Repe... | DV-RPTR Repe... | Analogue Repe... | Analogue Repe... | D-Star Repeate... | Split Repeater -... | Time Server - 2... | Remote Control... | Remote Control... | Remote Control... | 17:46 Monday 23/04/2012

The Split Repeater

- Allow for more than one receiver and/or transmitter
- Diversity reception using the BER as the basis for receiver choice
- Has all of the features of the standard repeaters

Split Repeater Configuration



Future Developments

- Add DCS Link to the STARnet Digital server
- Upgrade the Time Server for more announcements and languages
- Any more ideas?

The End

Thank you for listening.