



D-STAR Radio Programming Guide

Digital D-STAR opens up a new technology for amateur radio. Use and linking are not exactly preformed as we know conventional FM, IRLP or internet repeater operations. There are two methods of digital repeater linking with D-STAR: user and port linking. This document is an introduction to D-STAR linking and Internet operating (many thanks to the Alabama D-Star group for providing the information in this Guide).

Example 1: Local conversation

Greg (W4OZK) calls Ron (W4VM) on the Huntsville local D-STAR 2 meter repeater.

Greg configures his **IC-91AD** radio as follows:

UR : CQCQCQ
R1 : KI4PPF C
R2 : NOT USE*
MY : W4OZK

Greg calls Ron stating that he is on Huntsville port C. The Digital Voice, DV data is only repeated on the local 2 meter port C repeater.

Ron hears Greg calling him on the Huntsville repeater port C.

Ron configures his **ID-800** radio as follows:

MYCALL : W4VM
UrCALL : CQCQCQ
PRT 1 C : KI4PPF C
RPT 2 C :

Ron returns the call and they have a local DV conversation.

Example 2: Local crossband conversation

Greg, (W4OZK) moves to the 1.2G port A, on the Huntsville local D-STAR repeater. Ron, (W4VM) remains on the 2 meter repeater. They are cross-banding between the two repeaters.

Greg configures his **ID-1** radio as follows:

UR : CQCQCQ
RPT1 : KI4PPF A
RPT2 : KI4PPF C
MY : W4OZK

Greg calls Ron stating that he is on Huntsville port A. The DV data is now cross-banding between 1.2g port A and 2 meters port C. DV is heard on both port A and C.

Ron hears Greg calling him on the Huntsville repeater port C.

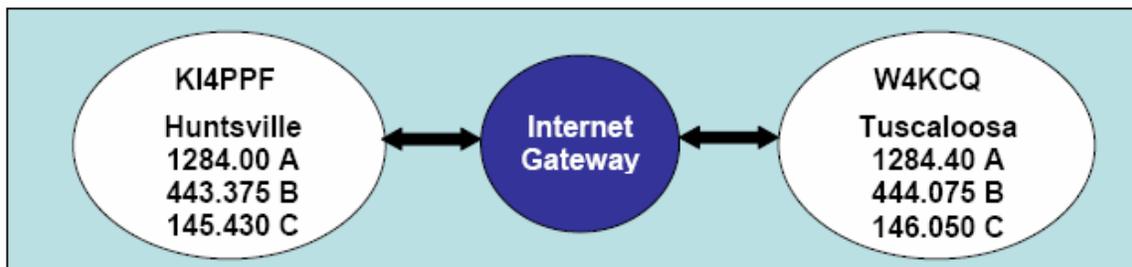
Ron configures his **ID-800** radio as follows:

MYCALL : W4VM
 UrCALL : CQCQCQ
 PRT 1 C : KI4PPF C
 RPT 2 C : KI4PPF A

Ron returns the call and they have a crossband conversation.

Note: If Greg did not state what port he is calling on, Ron thinks he is on the port he hears Greg on. Ron will call Greg on the port he is on, port C, but will not be heard by Greg. You do not have to state band or frequency, only the port.

Example 3: User Linking over the Internet



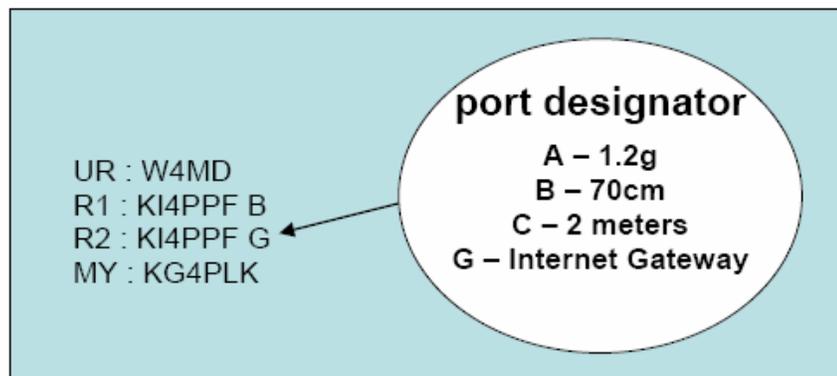
Actual configuration of two Alabama D-STAR repeaters

Robby (KG4PLK) in Huntsville AL wants to call David (W4MD) on Digital D-STAR repeater in Tuscaloosa AL. KG4PLK is on 70cm repeater in Huntsville. The 70cm repeater is called "repeater port B". KG4PLK does not know or he does need to know where David, W4MD is located. This is called user linking.

Robby configures his **IC-91AD** radio as follows:

UR : W4MD
 R1 : KI4PPF B
 R2 : KI4PPF G
 MY : KG4PLK

Robby calls David.
 The DV data mode finds David in the repeater system.
 David has recently talked on Tuscaloosa repeater port C and hears Robby calling.



David configures his **ID-800** radio as follows:

MYCALL : W4MD
 UrCALL : KG4PLK
 PRT 1 C : W4KCQ C
 RPT 2 C : W4KCQ G



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David returns the call to Robby and they have an Internet linked DV conversation.

Notice that Robby has one space between his call and the "G", and David has two spaces. The port designator must always be in the 8th position.

Example 4: Port Linking over the Internet

David, (W4MD) in Tuscaloosa AL wants to call anyone on 2 meters in Huntsville AL. David is on the 2 meter repeater of the Tuscaloosa repeater system. The 2 meter repeater is called "repeater port C". This is called port linking.

David configures his ID-800 radio as follows:

```
MYCALL : W4MD  
UrCALL : /KI4PPFC  
PRT 1 C : W4KCQ C  
RPT 2 C : W4KCQ G
```

David makes a general call, stating that he is on the W4KCQ repeater port C. The DV data mode from David is heard on the Huntsville repeater system, port C. Robby, (KG4PLK) hears David calling on the Huntsville repeater port C and wants to talk with him.

Robby configures his IC-91AD radio as follows:

```
UR : /W4KCQ C  
R1 : KI4PPF C  
R2 : KI4PPF G  
MY : KG4PLK
```

Robby returns the call to David and they have an Internet linked DV conversation.

Notice that Robby, KG4PLK has one space between the UR call and the C. The port designator always has to be in the 8th position.

Call Sign Designator Definitions:

ICOM radios have different descriptions for the call sign configuration but they are used the same way.

D-STAR Radio Call Sign Configurations		
IC-91AD	ID-800	ID-1
UR : W4MD	UrCALL : W4MD	UR : W4MD
R1 : KI4PPF B	RPT 1 C : KI4PPF B	RPT1 : KI4PPF B
R2 : KI4PPF G	RPT 2 C : KI4PPF G	RPT2 : KI4PPF G
MY : KG4PLK	MYCALL : KG4PLK	MY : KG4PLK

UR: The person or port call sign you want to call.

R1: The call sign of the repeater that you are talking on.

R2: The call sign plus port designator you want to cross link to or gateway designator.

MY: Your call sign

Digital Radio Display Status Indication:

Digital radios will indicate a status of the repeater and user that you are calling when you attempt to call them.

A repeater or users call sign display indicates who you are talking or listening to.

IC-91AD

No repeater signal: no indication

UR?: When the target station does not reply the call

UR*: When the linking repeater is unable to be found

ID-800

UR?: When the target station does not reply the call

UR*: When the linking repeater is unable to be found

ID-1

RPT UP: When the receiving signal of another station accessing the repeater

UR?: When the target station does not reply the call

RPT?: When the linking repeater is unable to be found

Additional Notes:

If you are not using the Alabama repeaters in these examples, simply replace your call sign and the repeater call sign in your radio digital call sign configuration for the digital repeater that you want to use.

The users in examples 3 and 4 need to be pre-registered by their local repeater administration person to be able to use Internet linking. Amateurs who are not registered can listen in on the conversation, talk locally, but not talk over the internet.

These examples do not use all the different configurations that are available to the operator. Consult the radio operator's manual for full operation, programming, use, other options and short cuts for user and port linking. Also, explore the digital messaging, data transfer, digital squelch, GPS operation and many other neat features.

This technology is new, so practicing controlling the radio and operating over the Internet will make you a more proficient amateur operator. The radios can also be programmed manually, via front panel or with computer software.