

IC-7100 Getting Started with D-Star.

Before you can use a D-Star Digital Voice repeater correctly with your new Icom IC-7100 you need to enter your call sign into the **MY Station** section on the IC7100

Press the **DR button** to enter DR Mode, press the **SET button**, on page 2 / 4 look for **My Station** and press to access, press **MY Call Sign**, then press the **QUICK button**, then on the screen press **Edit**, and enter your call sign (no gaps) using the keypad then press **ENT** to save.

Press the back arrow at bottom right of the screen, now press **TX Message**, press No 1: or if number 1 is already displaying a message that you don't want to use you can edit it or press an unused message line, then press the **QUICK button** and press **Edit** on the screen, enter a suitable message up to 20 characters then press **ENT** on the screen. Which ever message is highlighted is the one that will be transmitted. Press the **SET button** to exit.

Most D-Star repeaters have a strict 3 minute time-out and will cut you off without any warning so you will be cut off locally via RF and through the Gateway and no one else can use the repeater until you stop transmitting so set your time out to 3 minutes. Press **SET** scroll to **Function** on page 3 / 4 and press it, scroll to page 3 / 7 and press **Time-Out Timer** and select 3min. Press the **SET button** to return to the operating screen.

Setting the time & Date

Press **SET** scroll to page 4 / 4 and press **Time Set**, press **Date/Time**, press **Date** and set the current Date then press the **on screen SET** button to save. Do the same with **TIME** to enter and save the current **Time**. Press the back arrow and on the previous screen set your **UTC offset**, **Clock Display** to Local or UTC to suit your local conditions.

Using your local repeater with Gateway access

When in DR mode (press the **DR button**) on the screen press the name to the right of FROM, press it again if it wasn't already highlighted. Now press **Repeater List**, scroll down the next page (REPEATER GROUP) to find your country, for this example Group 15: United Kingdom is used. Press United Kingdom, scroll through the list to find your closest repeater, in this case we will use Bewdley GB7WF B, press to select and you will be returned to the DR screen. If the list is up to date then the frequency, duplex offset & call sign is automatically selected and no further input is required.

To use the repeater and the Gateway now press to the right of TO to highlight then press again and on the next screen press **Your Call Sign**, then press **Use Repeater (CQCQCQ)** and you should now be returned to the main screen. Now you are ready to transmit through the repeater and you will be heard through the Gateway.

When you transmit to your local repeater you should receive a reply in a text message on your display something similar to RPT?: GB7WF **G** (Bewdley **G**), if you see a **B** instead of a **G** then you aren't going through the gateway to the remote linked reflector and you will not be heard, also the repeater will ignore any linking/unlinking requests etc, this may be due to the repeaters gateway being off line but check your settings first. Be careful that which ever field (TO or FROM) is highlighted that you don't move the VFO knob as this will change that parameter.

To Link your local Repeater to Remote systems

The next step would be linking & unlinking your local repeater to the various reflectors. The list in your 7100 will be dated and may not include the Digital Conference Server (DCS) reflectors so use the below example to link and unlink to one of the Dplus Reflectors (REF) and to add a DCS reflector to your list.

This example is to link to the main USA reflector 001 module C, in **DR** mode press the **TO** box to highlight it, press it again to enter the "TO SELECT" menu, press **Your Call Sign**, then scroll down to "Link REF001C" and press it, you should now be back on the main DR screen with your local repeater name in the FROM box and Link REF001C in the TO box, now press your PTT and announce your call and that your are linking etc, you will link

your local repeater to Reflector 1 C, status page here > <http://ref001.dstargateway.org/>

Before you can talk to other stations that are also linked to the reflector you have to return to the "Use Repeater (CQCQCQ)" in the TO box, you can either do this by pressing the **TO** box and then **Your Call Sign** and selecting and pressing **Use Repeater**, or if the "Your Call Sign" folder was the last one you accessed and the TO box is highlighted just rotate the VFO knob until "Use Repeater" comes back into view.

To explain what is happening, the Your Call Sign, also known as UR: is the call sign targeting command that you transmit every time you press the PTT, for normal use the actual transmitted code is CQCQCQ, by selecting "Link to REF001C" the code now transmitted will be REF001CL. The L in the 8th position is a linking command and the letters before the L is the target. When you have successfully linked (repeater should transmit a link acknowledgement) you have to select Use Repeater (CQCQCQ) otherwise you are asking the repeater to link again and your audio does not go through the Gateway to the Reflector and an announcement will continually reply "Already Linked" or something similar.

Some repeaters require that you unlink (if linked) first before attempting to link elsewhere, so in the TO box look in the Your Call Sign folder for something similar to **Unlink Repeater U** and send that command first before selecting another link command and then return to CQCQCQ (Use Repeater).

To add another Reflector to the YOUR CALL SIGN list.

Use the below example, DCS005B the main UK DCS reflector, to add other reflectors to your list.

In **DR** mode select the **TO** box and press to enter the TO SELECT menu, press to enter **Your Call Sign** then press the **QUICK** button and now on the screen you should see Add Edit Delete. Press **Add**, press **NAME:** and enter Link to DCS005B via the keypad, note D C S zero zero 5 B, press **[AB]** to switch between upper and lower case characters etc, when done press **ENT**. Now press **CALL SIGN** and add, all in upper case with zero's not the letter O, **DCS005BL** all one word then press **ENT** and on the next screen press **<<Add Write>>**

You should now be back in the Your Call Sign folder and DCS005B should be on display, it might not be in any particular order in the list and may have inserted itself between REF001A & REF001B for example, I've not found out how to move items up or down the list without using the CS-7100 software.

If the one you add turns out not to be correct in anyway then you can edit it or delete it as long as it is not currently in use in the TO box, if it is then press the **TO** box to go into the **Your Call Sign** folder and select another and you will be returned to the main DR screen, go back into the Your Call Sign folder but this time **DO NOT press the screen**, rotate the VFO knob until the item you want to edit or delete is highlighted, then press the **QUICK** button and select **Edit** or **Delete** as required.

List of Reflectors can be found on these web sites,

DCS & ircddb status pages > <http://xreflector.net/neu3/>

Dplus REF reflectors (might be dated) <http://www.dstarinfo.com/reflectors.aspx>

Using GPS

The IC-7100 can transmit a location without a GPS by using manual mode, this is also useful for selecting your Nearest Repeater from the DV Repeater list.

Press the **SET** button, scroll to page 2 / 4 press **GPS** then **GPS Set**, press **GPS Select**, press **Manual**. Then back on the **GPS SET** page press **Manual Position**, press the **QUICK** button, press **Edit**. Now press **LATITUDE** and enter your location and press **ENT**. Do the same to enter your **LONGITUDE**. Press **Altitude** and enter your Above Sea Level which might be in Feet or Metres depending on which unit you have enabled and press **ENT**. Then press **<<Write>>** and **YES**.

Press the back arrow to return to the main GPS page and scroll down to page 2 / 2 and make sure **GPS Auto TX** is **OFF**, if a time is displayed press the screen and select **OFF**.

If you wish to transmit your location then press **GPS TX Mode** and press **GPS-A (DV-A)** On page 1 / 2 the Unproto

Address should be **API710,DSTAR*** if not select it, press the **QUICK button**, select **Edit** and enter the address. Press the back arrow to get back into the GPS-A(DV-A) SET menu. **Data Extension** should read **Course/Speed**, if not press and select. Set the **Time Stamp OFF**, set **Altitude ON**.

Scroll to page 2 / 2 and press **GPS-A Symbol**, there are four defaults, if none of them are suitable, press and hold one of them until **Edit Symbol** is displayed, press **Edit Symbol** and select one from the 17 pages. When the four defaults are displayed the one that is highlighted is the symbol you will transmit.

Back on the **GPS-A(DV-A)** menu select an **SSID** to suit the symbol, if you choose the House QTH (VHF) symbol then an SSID would not normally be required, but the standard for the car symbol is -9 etc.

Comment can be set up to 27 characters (I think) Follow the **Edit** (QUICK > Edit etc) commands to enter etc.

Press the back arrows to return to the main **DR** display and you should see **DV-A** in a box at the top of the screen. Now when you transmit through an APRS/DPRS enabled Repeater your location details that you have entered will be sent to the APRS servers and should be displayed on web sites such as aprs.fi.

If you do not wish to transmit your location then press the **SET button**, press **GPS** scroll to page 2 / 2 and press **GPS TX Mode** and select **OFF**. This will not affect finding the Nearest Repeater option, it will just stop your location being transmitted.

You can now get the 7100 to automatically search for the nearest DV repeater by pressing the **FROM** box and pressing **Near Repeater**, it will search for the closest DV Repeater to the location information you have entered with the nearest at the top of the list, select as required etc.

If you use the 7100 mobile with an external GPS and want to transmit your location, set **GPS TX Mode** to **GPS-A(DV-A)** and switch **GPS** from **Manual** to **External** by pressing on page 1/2 in **GPS SET > GPS Select** and select **External**. Of course you will need a GPS with a serial output connected via the 2.5mm DATA port on the rear of the 7100. I use an old Garmin GPS3 and switch from manual to external when I move the 7100 out of the shack into the car and change my symbols and SSID to suit.

SD Card

You can save all your settings to an SD card. Switch off the power before inserting or removing a card and then when you have inserted one and powered up after a few seconds you should see a small SD card type symbol next to the clock at the top right of the display.

To save your setting to the card press **SET**, scroll down to page 4 / 4 and select **SD Card**, if it's a new one then **Format** it first, then press **Save settings** and follow the prompts. If you have to reset the radio for any reason you can then reload the settings from the SD Card via the same menu by following the **Load Setting** prompts, if you have set the time & date it will automatically name the file by time & date but you can edit it to another title if you wish.

73 de Mike G1ZRN (D-Star since 2007)
GB7WF B since 2008