

D-Star Calc

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D-Star Calc

by RT Systems

The Programmer is designed to give you the ease and convenience of programming the memories and options of the radio from your PC.

Using the Programmer, you can create separate files for unique applications such as travel, emergency activities, or special events. These files can contain different settings, such as memories, power management features, and DTMF numbers, for each purpose.

The Programmer also gives you the ability to read a configuration from the radio. The configuration would be stored in a file on your computer to be changed easily. Then, with minimal button pushing, you can send the altered file back to program the radio.

D-Star Calc

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Foreword

These help files are offered as reference for the features of the programmer and with some added information about the features and functionality of the radio.

The final reference for a feature of the radio is the Users' Manual for that radio. Any error, omission or misrepresentation of a radio's ability is unintentional.

The Programmer cannot make the radio do anything that it cannot do from the face of the unit. It makes it easier to set options for the existing functions.

Part



1 D-Star Calculator

The RT Systems programmer provides an easy way to find the details for the D-Star repeaters you want to use. The D-Star Calc has information on repeaters from all over the world. This information is right in the programmer. Updates to this information are supplied through updates to the programmer. Expect them about every three months.

The D-Star Calc in the programmer helps you by entering the details for a repeater in the correct format for D-Star operations.

Shown here is the main page of the calculator.

The screenshot shows the 'DStar Calc' dialog box with the following fields and callouts:

- 1**: Local Repeater with Gateway (dropdown)
- 2**: Source Country (dropdown, set to 'United States, Wisconsin')
- 3**: Source City (dropdown)
- 4**: Source Callsign (dropdown)
- 5**: Source Frequency (text box)
- 6**: User (text box, set to 'CQCQCQ')
- 7**: Destination Country (dropdown, set to 'United States, Wisconsin')
- 8**: Destination City (dropdown)
- 9**: Destination Callsign (dropdown)
- 10**: Destination Frequency (text box)
- 11**: Frequency (text box)
- 12**: Channel Name (text box)
- 13**: Channel Number (dropdown, set to '0')
- 14**: Autolncrement (checkbox, unchecked)
- 15**: Apply (button)
- OK (button)
- Cancel (button)

Note: The numbers in red in the figure are for identification only. These help you find the specific field for the explanation that follows. You will not see these numbers when you use the DStar Calc in the programmers.

Local repeaters are selected from the fields on the left. You must be able to hit this repeater to initiate communications.

1: Type of Communication

The screenshot shows the DStar Calc application window. A red '1' in a box is positioned next to the 'Source Route' dropdown menu, which is currently open. The menu items are: Local Repeater, Local Repeater with Gateway, Echo Test, Repeater Status, Source Route (highlighted in blue), Specific User, Link to Repeater, Link to Reflector, and Unlink. Below the menu is a 'Callsign' dropdown menu with 'K5PLD' selected. A text box below that contains '146.4900 +1.0000'. To the right of the menu is a 'User' text box containing 'CQCQCQ'. Below that is a 'Destination' section with three dropdown menus: 'Country', 'City', and 'Callsign'. At the bottom of the window, there are four summary fields: 'Frequency' (146.4900 +1.0000), 'RPT1 (Source)' (K5PLD C), 'RPT2 (Destination)' (K5PLD G), and 'Your Call'. Below these are 'Channel Name' and 'Channel Number' (0) fields, with an 'AutoIncrement' checkbox. At the very bottom are 'Apply', 'OK', and 'Cancel' buttons.

Local Repeater - Digital mode communication similar to that of a more common FM repeater. You talk through the repeater to someone nearby who can hear and access this repeater.

Local Repeater with Gateway - Digital communications on a repeater with an Internet connection. The Internet connection gives you the ability to talk with others on other D-Star equipment such as a DVdongle attached to their computer.

Echo Test - Testing your equipment to be sure your connection is correct. Basically, it is "pinging" the repeater.

Repeater Status - The status of the repeater.

Source Route - In this mode, the DStar Calc allows you to select both the Source repeater (starting point) and the Destination repeater (ending point)

based on location. Easily set up repeater information for communications between your local QTH and a foreign country.

Specific User - Calling a specific user somewhere, world wide, on the D-Star network. Complete Source and User. Destination information is not completed in the calculator. This mode is used when you don't know where the person is.

Link to Repeater - Link the source repeater to a destination repeater. With this, you will hear locally all the traffic of the remote repeater. This is fast becoming the most popular D-Star mode. It requires the least amount of setup for someone at the receiving end. When the repeaters are linked, someone hearing the signal can respond by simply keying his local repeater using "Local Repeater with Gateway". This eliminates the need for him to program a the repeater callsign of the transmitting operator.

Note: *It is recommended that you wait about a minute after linking repeaters since you will not hear an ongoing conversation. If someone is talking, this will give him a chance to finish before your transmission begins. You will hear the next transmission; just not the one in progress.*

Also remember, if you link, you should unlink. See the sample channel programming for linking.

Link to Reflector - Link the source repeater to a reflector. A reflector is a "linked" group of repeaters. These repeaters are permanently connected. Just as with Link to Repeater, Link to Reflector is fast becoming popular for general listening for other D-Star activity. In this mode, your local repeater is linked to a group of repeaters giving it a chance to hear signals from a greater area (the area covered by the reflector). In the D-Star calculator, the reflectors are well identified making selection easy during channel setup.

Note: *It is recommended that you wait about a minute after linking repeaters since you will not hear an ongoing conversation. If someone is talking, this will give him a chance to finish before your transmission begins. You will hear the next transmission; just not the one in progress.*

Also remember, if you link, you should unlink. See the sample channel programming for linking.

Unlink - Undo what you just did. Repeaters and reflectors should be unlinked after use.

Suggested channel setup for most D-Star radios involves using four channels for each

Link to Repeater or Link to Reflector. They would be as follows:

Channel 1: Local Repeater with linking command - Joins the repeater that you can access to others at a distance.

Channel 2: Local Repeater with Echo Test - Checks that your connection is in place properly.

Channel 3: Local Repeater with Gateway - your "talk around" channel. This puts your signal out over the connection and does not repeatedly trigger the linking command.

Channel 4: Local Repeater with unlink command - breaks the connection between the local repeater and those at a distance.

Remember, the last person out of the conversation should unlink the repeaters.

Another suggestion would be to put these four channels in a bank. You then easily move through only four channels. This is especially helpful for someone traveling when the local repeater will vary as you move. The isolation of the channels in the bank makes it easier to stay on the right repeater.

Source - The options in this group refer to the repeater through which you will communicate. You must be able to communicate with this repeater for a transmission to be successful.

2: Country - Includes countries around the world on the D-star network. Select the origination point for the transmission.

3: City - Narrowing down the origination point for the transmission

4: Callsign - The callsign of the repeater. As different callsigns are selected, the next field will be completed with the available frequencies assigned to that callsign.

5: Repeater List - Select the frequency on which you will talk and listen. This frequency can be in the 2M, 440 MHz or 1.2 GHz band for best performance with your equipment.

The D-Star calculator will not display repeaters outside the bands covered by your radio. This could result in no available repeaters for a given callsign. While this callsign is assigned to a D-Star repeater, that repeater is not in the operating band of your radio. It is not displayed since it would be pointless for it to be selected.

6: User - Enter the callsign of a person you are attempting to contact.

When using Specific User, this person can be anywhere on the D-Star network. You do not need to know where. The system will find them and establish communications.

This field is available for several of the modes. Use it only if you want to call a specific person.

Destination - The fields in this group refer to the output signal: where the signal is to be heard. This is the beauty of D-Star. You can talk to the local repeater and be heard anywhere around the world.

7: Country - Includes countries around the world on the D-star network. Select the final destination for the transmission.

8: City - Narrowing down where the signal will be heard.

9: Callsign - The callsign of the repeater. As different callsigns are selected, the next field will be completed with the available frequencies assigned to that callsign.

10: Repeater List - Select the frequency on which your transmission will be heard.

11: Information for the channel appears at the bottom of the DStar Calc screen as you make your selections. Frequency, RPS1(Source), RPT2(Destination), and Your Call are displayed just as they will be programmed into the memory channel. Review this information and make changes to the fields on the screen if needed.

12: Channel Name - Enter an name for the channel. This information is for display on the radio only. It does not affect how the radio handles the other settings.

13: Channel Number - Select the Channel number this information will be assigned to. The DStar Calc will overwrite a channel that is already programmed.

14: AutoIncrement - Check this box to advance the channel number automatically. This is handy if you are programming several channels.

15: Screen Options

Apply - Assigns the information the the selected channel and leaves the DStar Calc open.

OK - Closes the DStar Calc.

Cancel - Closes the Dstar Calc without applying changes to the radio file.

Part



2 Suggestions for DStar File Setup

Presented here is a suggestion for structuring a file for Star operations. This may help you get started.

A Star beginner can use the Star system to find one person on the system easily with only his callsign; to join a group on a repeater for a long distance chat; or to join a group on a reflector for a "talk-around". There is much more to this technology; however, these instructions are designed to help you get started.

Step 1 for ALL Star radios

Through the menu at the top of the programmer go to Star | Digital (Star) Settings. The screen that opens may be different from this one; however, the My Callsign field will be found on this screen in all the programmers. (Note: In the IC-91 and IC-92 be sure you are in Band B Memories to access this menu item.)

Put your personal FCC Callsign here

Put a message here Name / Location / Radio might be included

Put your callsign (the one assigned to you by the FCC) into the first My Callsign field. Click OK.

Note: This information is saved with this file. If you create a new file for a D-Star radio you will customize the information on this screen for that file.

Save the file. Click File | Save (or Save As) and enter a filename. This file will contain the callsign information you just entered and the frequency information you will enter after the file is saved.

To find a person on the system easily with only his callsign

You have a friend traveling. You don't know where he will be tomorrow night when you plan for him to check in. This Star setup will instruct the system to find him for you. You only need to know what Star repeater in your area is accessible to you. Remember, you must be able to access the local repeater you select.

This is most easily done using the Star Calculator in the programmer. Click Star | Star Calc in the menu.

DStar Calc

Function: Local Repeater with Gateway

User: CQCQCQ

Source:

- Country: United States, Colorado
- City: Denver
- Callsign: W0CDS

Destination:

- Country: United States, Colorado
- City: Denver
- Callsign: W0CDS

Frequency offsets:

- 145.2500 +0.6000
- 446.9625 -5.0000
- 1283.9625 -12.0000

Summary:

| Frequency | RPT1 (Source) | RPT2 (Destination) | Your Call |
|------------------|---------------|--------------------|-----------|
| 145.2500 +0.6000 | W0CDS C | W0CDS G | CQCQCQ |

Channel Name: W0CDS G

Channel Number: 0 Autoincrement

Apply Close

Use of the Calculator is described in details in the D-Star Calculator section of this help. For this setup you will set

Function - Local Repeater with Gateway - This puts you on the Star system

Country and City - Your location or the nearest location with a repeater that you can access. This will not work if you cannot hit the repeater you select.

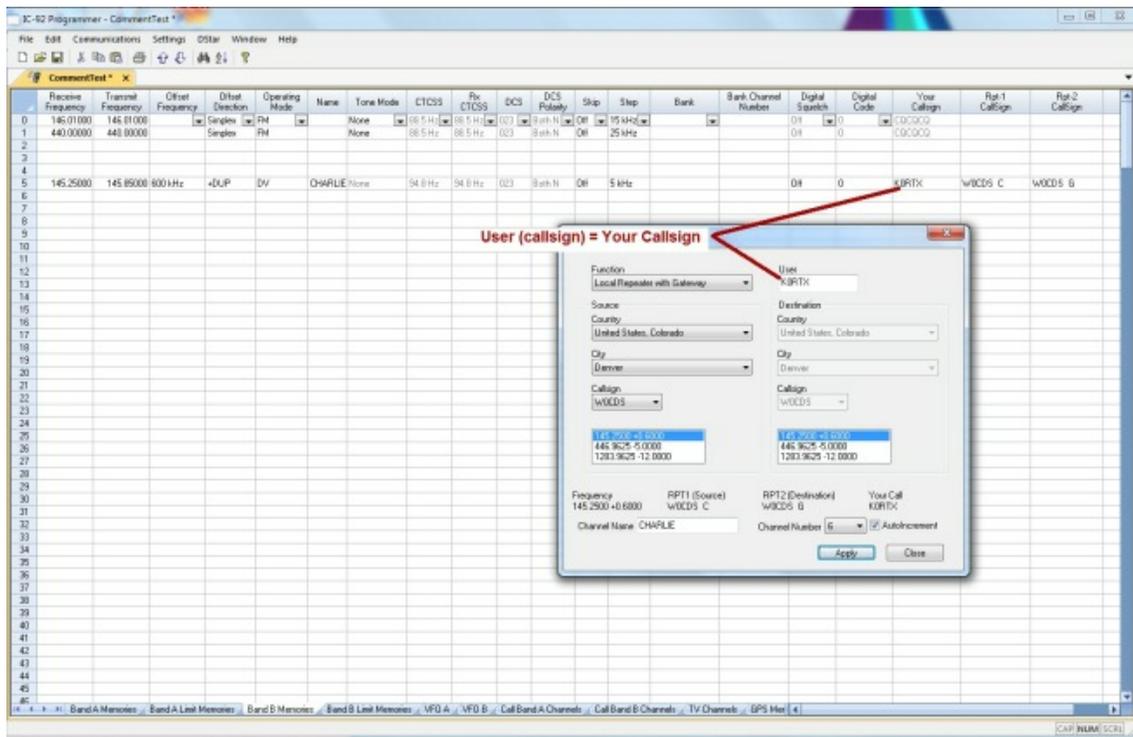
Callsign - The location you pick may have more than one. Again, select the one that has the repeater that you can access.

Frequencies - There are two frequency boxes. Select from the one on the left the frequency you can work best (2M, 440Mhz, or 1.2G) depending on your equipment and antenna. The setting of the other is not important for this operation. The repeater will pass the signal to the Internet. The system will take it from there and transmit out on the band that the person last ID'ed in on.

Channel Name - Enter a designator to appear on the face of the radio for this channel. The person's name may be a good reminder for you.

User - Enter the callsign of the person you want to reach. This tells the Star system to search for this particular callsign over the entire system. Your transmission will be repeated through the last repeater on which this callsign was heard. (If your friend has been traveling, he will need to ID into the local repeater that he plans to talk back to you on. Else, the system might try to find him at his last location many miles away.)

Click Apply to have the programmer set up this channel. When you send the file to the radio, this channel will be ready for you to use to contact this specific person wherever on the Star network they are.



When you use this channel, key up and call with his and your callsigns as you would for any local contact. Give him plenty of time to respond. It may take some time for the system to find him. You can call again after a time; but, don't give up and leave the frequency.

On the other end, your friend will need to capture your callsign to instruct the local repeater to route back to you. This is not really how you want to contact someone who may be driving since this may take several button presses. You will hear local traffic until your friend responds and the repeaters connect to each other.

Once you make contact, continue your conversation on this channel.

To talk to someone on a specific repeater (without linking the repeaters)

Repeater routing sends your signal to one specific repeater. Again, basically you have local communications someplace other than locally. The repeater to which you direct your signal can be anywhere in the world.

This process is used when you know where the group is that you want to talk to and you don't want to include a broad range of repeaters. It is necessary for use on some repeaters that don't allow linking. It is a requirement for contacts in Japan where repeaters cannot be linked. (We will discuss linking in the next section)

This function limits your ability to hear others on the system and for others to join your conversation. It is not a private conversation, however.

This is most easily done using the Star Calculator in the programmer. Click Star | Star Calc in the menu.

Use of the Calculator is described in details in the D-Star Calculator section of this help. For this setup you will set

Function - Source Route

Source:

Country and City - Your location or the nearest location with a repeater that you can access. This will not work if you cannot hit the repeater you select.

Callsign - The location you pick may have more than one. Again, select the one that has the repeater that you can access.

Frequencies - There are two frequency boxes. Select from the one on the left the frequency you can work best (2M, 440Mhz, or 1.2G) depending on your equipment and antenna. The setting of the other is not important for this operation. The repeater will pass the signal to the Internet. The system will take it from there and transmit out on the band that the person last ID'ed in on.

Channel Name - Enter a designator to appear on the face of the radio for

this channel. The person's name may be a good reminder for you.

User - Leave this as CQCQCQ unless you are calling a particular person on a particular machine.

Destination:

Country and City - The location you want to contact.

Callsign - The location you pick may have more than one.

Frequencies - Select a band on which the receiving end will hear the transmission (you probably were given this information by the receiving station).

Click Apply to have the programmer set up this channel. When you send the file to the radio, this channel will be ready for you to use to contact this specific repeater on the D-Star network.

You will remain on this channel once contacts are made.

This is an older protocol for making a contact and can be a little difficult to use since your signal is limited to this one repeater. Anyone can talk back to you once you make your call on this repeater.

To connect to (link) a repeater

This is an easy way to use D-Star. When you are linked to a repeater, you basically have local communications someplace other than locally. The repeater you are linked to can be anywhere in the world.

This process is used when you know where the group is that you want to talk to and you don't want to include a broad range of repeaters in the conversation.

While this is a valid use of the Star system, it is somewhat discouraged since it ties both repeaters into fairly limited use.

There are three parts to this operation:

- 1) Create your talk-around channel. You will use this channel again for other Star operations. "Talk" is a good name for identifying this channel.

Using the Star calculator in the programmer: click Star | Star Calc from the menu

Function - Local Repeater with Gateway - This puts you on the Star system

Country and City - Your location or the nearest location with a repeater that you can access. This will not work if you cannot hit the repeater you select.

Callsign - The location you pick may have more than one. Again, select the one that has the repeater that you can access.

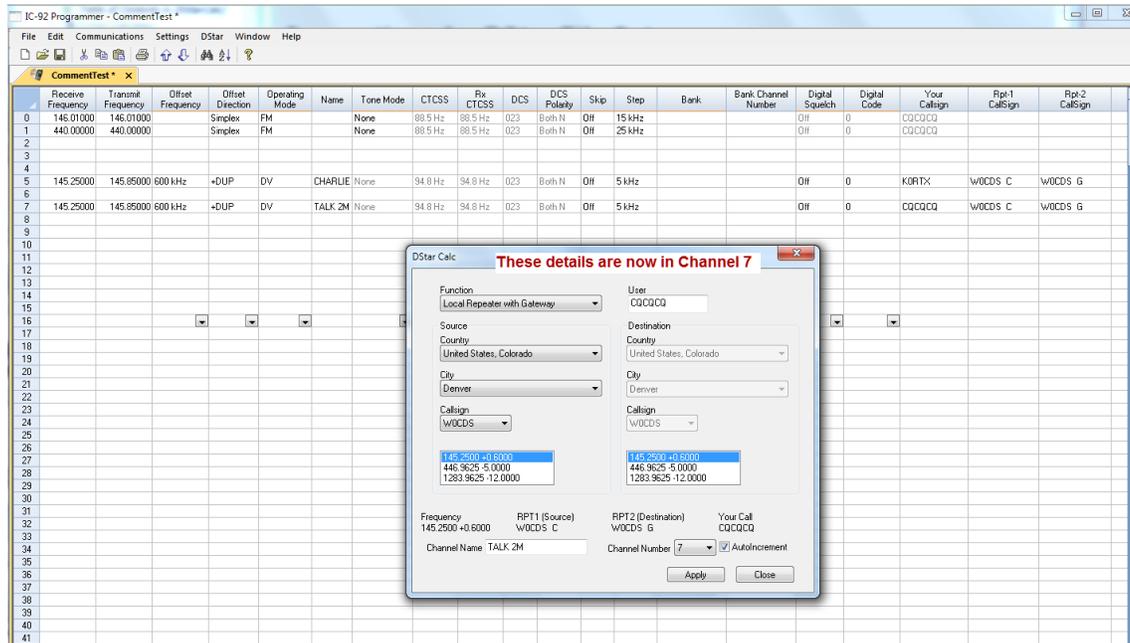
Frequencies - There are two frequency boxes. Select from the one on the left the frequency you can work best (2M, 440Mhz, or 1.2G) depending on your equipment and antenna. The setting of the other is not important for this operation. The repeater will pass the signal to the Internet. The system will take it from there and transmit out on the band that the person last ID'ed in on.

Channel Name - Enter a designator to appear on the face of the radio for this channel. "Talk" may be a good reminder for you. If you plan to set up both 2M and 440 access, you might want to name them "Talk2M" and "Talk440", respectively.

User - Leave this as CQCQCQ. This is a general talk channel that is not directed to one person specifically.

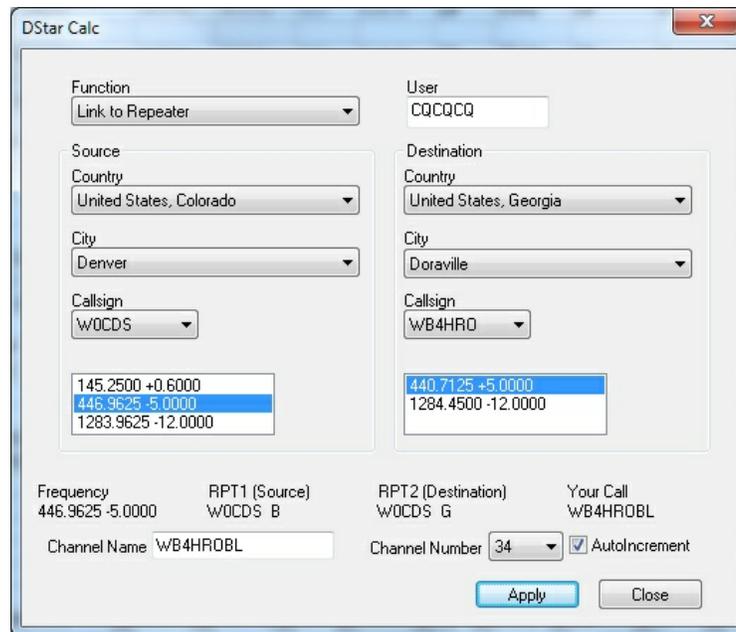
Click Apply to have the programmer set up this channel. When you send the file to

the radio, this channel will be ready for you to use to talk on the Star network when you are connected to a repeater.



2) Link to Repeater - Set up a channel to link the repeaters. .

Using the Star calculator in the programmer: Click Star | Star Calc from the menu



Function - Link to Repeater.

Source:

Country and City - Must be the one you used for your talk-around channel.

Callsign - Must be the one you used for your talk-around channel.

Frequencies - Must be the one you used for your talk-around channel.

Channel Name - An easy identifier to remind you what this channel is for.

User - Leave this as CQCQCQ.

Destination:

Country and City - Any country listed.

Callsign - One for the area being called.

Frequencies - The band on which you expect to hear activity. (The one they can hit on the other end. If you don't know... pick one.)

Click Apply to have the programmer set up this channel. When you send the file to the radio, this channel will be ready for you to use to link these repeaters the Star network.

3) Create the "unlink" channel. - Just as you would hang up the phone, you will unlink the repeaters once you finish your conversation. If someone else has joined the conversation it will be their responsibility to unlink when they finish.

Using the Star calculator in the programmer: click Star | Star Calc from the menu

DStar Calc

Function: Unlink

User: CQCQCQ

Source:

Country: United States, Colorado

City: Denver

Callsign: WOCDS

Destination:

Country:

City:

Callsign:

145.2500 +0.6000
446.9625 -5.0000
1283.9625 -12.0000

Frequency: 145.2500 +0.6000 RPT1 (Source): WOCDS C RPT2 (Destination): WOCDS G Your Call: U

Channel Name: UNLINK Channel Number: 7 Autolncrement

Apply Close

Function - Unlink - select this from those in the list.

Country and City - Must be the one you used to create the link.

Callsign - Remains unchanged from that you used to create the link.

Frequencies - Remains unchanged from that you used to create the link.

Channel Name - Unlink

User - Leave this as CQCQCQ. This does not matter. This is a function for the local repeater only.

To connect to (link) a reflector

This is an easy way to use D-Star. This is where all the fun is. When you are linked to a reflector, you basically have local communications to locations all over the world without having to know where anyone is. The reflector you are linked to can be anywhere in the world. Try REF030C in Atlanta, GA for lots of activity.

This process is used when you want to talk and listen to people from almost anywhere around the world.

There are three parts to this operation:

1) Create your talk-around channel. You will use this channel again for other Star operations. "Talk" is a good name for identifying this channel. If you created talk channel on your local repeater as part of other function setup, you can continue to use that one. If not, the steps are detailed here.

Using the Star calculator in the programmer: click Star | Star Calc from the menu

Function - Local Repeater with Gateway - This puts you on the Star system

Country and City - Your location or the nearest location with a repeater that you can access. This will not work if you cannot hit the repeater you select.

Callsign - The location you pick may have more than one. Again, select the one that has the repeater that you can access.

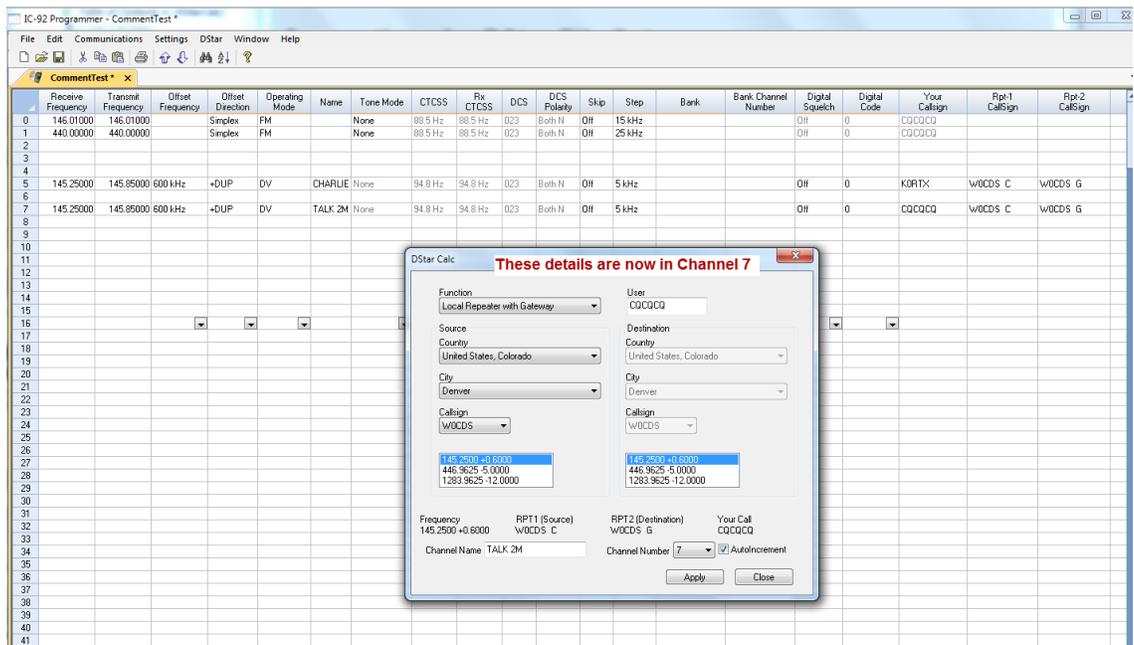
Frequencies - There are two frequency boxes. Select from the one on the left the frequency you can work best (2M, 440Mhz, or 1.2G) depending on your equipment and antenna. The setting of the other is not important for this operation. The repeater will pass the signal to the Internet. The system will take it from there and transmit out on the band that the person last ID'ed in

on.

Channel Name - Enter a designator to appear on the face of the radio for this channel. "Talk" may be a good reminder for you. If you plan to set up both 2M and 440 access, you might want to name them "Talk2M" and "Talk440", respectively.

User - Leave this as CQCQCQ. This is a general talk channel that is not directed to one person specifically.

Click Apply to have the programmer set up this channel. When you send the file to the radio, this channel will be ready for you to use to talk on the Star network when you are connected to a repeater.



2) Link to Reflector - Set up a channel to link you local repeater to a reflector.

Using the Star calculator in the programmer: Click Star | Star Calc from the menu

DStar Calc

Function: Link to Reflector

User: CQCQCQ

Source:

Country: United States, Colorado

City: Denver

Callsign: WOCDS

145.2500 +0.6000
446.3625 -5.0000
 1283.9625 -12.0000

| Reflector | Location |
|-----------|----------------------------|
| REF029A | Utah, United States |
| REF029B | Utah, United States |
| REF029C | Utah, United States |
| REF030A | Atlanta, GA, United States |
| REF030B | Atlanta, GA, United States |
| REF030C | Atlanta, GA, United States |
| REF031A | Sweden |
| REF031B | Sweden |
| REF031C | Sweden |
| REF032A | Poland |

Frequency: 446.9625 -5.0000 RPT1 (Source): WOCDS B RPT2 (Destination): WOCDS G Your Call: REF030CL

Channel Name: DEN|R30 Channel Number: 35 Autolncrment

Apply Close

Function - Link to Reflector.

Source:

Country and City - Must be the one you used for your talk channel.

Callsign - Must be the one you used for your talk channel.

Frequencies - Must be the one you used for your talk channel.

Channel Name - An easy identifier to remind you what this channel is for. Shown here is "Den R30" This is my Denver repeater linking to Reflector 030.

User - Leave this as CQCQCQ.

Destination:

Shown is a list of reflectors and their location. Select one for this channel.

Click Apply to have the programmer set up this channel. When you send the file to the radio, this channel will be ready for you to use to link your local repeater to the reflector on the Star network.

| | Receive Frequency | Transmit Frequency | Offset Frequency | Offset Direction | Operating Mode | Name | Tone Mode | CTCSS | Pk CTCSS | DCS | DCS Polarity | Skip | Step | Digital Squelch | Digital Code | Your Callign | Ppt1 Callign | Ppt2 Callign | Bank | Bank Channel Number |
|----|-------------------|--------------------|------------------|------------------|----------------|----------|-----------|---------|----------|-----|--------------|------|--------|-----------------|--------------|--------------|--------------|--------------|------|---------------------|
| 0 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | wOCDS G | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | CQCCQ | wOCDS C | wOCDS G | | |
| 1 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | wOCDS I | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | wOCDS I | wOCDS C | wOCDS G | | |
| 2 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | wOCDS U | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | U | wOCDS C | wOCDS G | | |
| 3 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | D-030C | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | REF030CL | wOCDS C | wOCDS G | | |
| 4 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | D-KUQHP | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | KUQHP | wOCDS C | wOCDS G | | |
| 5 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | D-KJ4V0 | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | KJ4V0 | wOCDS C | wOCDS G | | |
| 6 | 145.25000 | 145.85000 | 600 kHz | +DUP | DV | D-KJ4V0 | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | KJ4V0 | wOCDS C | wOCDS G | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | wOCDS G | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | CQCCQ | wOCDS B | wOCDS G | | |
| 9 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | wOCDS I | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | wOTLM I | wOCDS B | wOCDS G | | |
| 10 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | wOCDS U | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | U | wOCDS B | wOCDS G | | |
| 11 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | D-030C | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | REF030CL | wOCDS B | wOCDS G | | |
| 12 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | D-KUQHP | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | KUQHP | wOCDS B | wOCDS G | | |
| 13 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | D-KJ4V0 | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | KJ4V0 | wOCDS B | wOCDS G | | |
| 14 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | D-KJ4V0 | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 30 kHz | Off | 0 | KJ4V0 | wOCDS B | wOCDS G | | |
| 15 | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | wOTLM G | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | CQCCQ | wOTLM B | wOTLM G | | |
| 18 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | wOTLM I | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | wOTLM I | wOTLM B | wOTLM G | | |
| 19 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | wOTLM U | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | U | wOTLM B | wOTLM G | | |
| 20 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | M-030C | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | REF030CL | wOTLM B | wOTLM G | | |
| 21 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | M-KUQHP | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | KUQHP | wOTLM B | wOTLM G | | |
| 22 | 446.88750 | 441.88750 | 5.00 MHz | -DUP | DV | M-KJ4V0 | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | KJ4V0 | wOTLM B | wOTLM G | | |
| 23 | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | |
| 25 | 145.38750 | 144.78750 | 600 kHz | -DUP | DV | AvB4HR0I | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | AvB4HR0 | wODK C | wODK G | | |
| 26 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | AvB4HR0I | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | AvB4HR0 | wODK B | wODK G | | |
| 27 | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | |
| 30 | 446.91250 | 446.91250 | | Simplex | DV | | None | 88.5 Hz | 88.5 Hz | 023 | Both N | Off | 25 kHz | Off | 0 | CQCCQ | KC0CVU B | KC0CVU G | | |
| 31 | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | |
| 33 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | wB4HR0B | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | wB4HR0B | wOCDS B | wOCDS G | | |
| 34 | | | | | | | | | | | | | | | | | | | | |
| 35 | 446.96250 | 441.96250 | 5.00 MHz | -DUP | DV | DEN R30 | None | 94.8 Hz | 94.8 Hz | 023 | Both N | Off | 5 kHz | Off | 0 | REF030CL | wOCDS C | wOCDS G | | |
| 36 | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | | | | | | | |
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| 45 | | | | | | | | | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | | | | |

3) Create the "unlink" channel. - Just as you would hang up the phone, you will unlink from the reflector once you finish your conversation. If someone else has joined the conversation it will be their responsibility to unlink when they finish.

Using the Star calculator in the programmer: click Star | Star Calc from the menu

Function - Unlink - select this from those in the list.

Country and City - Must be the one you used to create the link.

Callsign - Remains unchanged from that you used to create the link.

Frequencies - Remains unchanged from that you used to create the link.

Channel Name - Unlink

User - Leave this as CQCQCQ. This does not matter. This is a function for the local repeater only.

This overview is offered with hopes that we will hear you on the air sooner than later!!!

Endnotes 2... (after index)

