

Using HSDR's built-in DDE client

Software defined radios supported by HSDR version 2.0 and above may be frequency controlled via DDE., Dynamic Data Exchange. It is used to share information between different software programs. Having the capability to control your software defined radio's Tune or LO frequency via DDE is especially helpful when dealing with Doppler correction in Satellite and EME based communications. The example below demonstrates how to configure HSDR and Ham Radio Deluxe's Satellite Tracker to control a Softrock VHF Ensemble SDR for Doppler correction. It is assumed you have already successfully configured HSDR to work with your software defined radio. Only minor changes if any will have to be made to the instructions below for use with other software defined radio's HSDR supports such as the Fun Cube Dongle.

For linear transponder satellite operators, the capability to view the entire transponder at once is an invaluable tool. Imagine being able to view and record the entire transponder at once. The advantages are tremendous:

- Quickly visually identify existing QSOs and stations calling CQ.
- Quickly identify new stations coming on the transponder as they enter the footprint.
- Quickly visually identify who is using software Doppler control.
- Record and play back the entire transponder to hear all stations on the transponder which you did not make contact with.
- Quickly locate on the transponder stations which you have limited mutual visibility with.
- Never have to wonder if there is someone else on the transponder you could be contacting while you're currently engaged in a QSO.
- No need to purchase an expensive full duplex all mode radio or two all mode half-duplex radios. A half duplex radio and software defined radio, such as a relatively inexpensive Softrock VHF Ensemble (which requires a pre-amp) or Fun Cube Dongle is all you need.

Configuring HRD SatTracker:

- Download and install Ham Radio Deluxe version 5
- Run the HRD Satellite Tracking sub program
- From the top menu select **Tools>>>Options**
- Make the suggested in each tab below.
 - Enter your 4 or 6 digit grid square under **Your Information>>>Locator**
 - **DDE Local Server>>> Select Orbitron**
 - Click **OK** on the bottom right of this window

- On the top iconed menu bar click on the **Satellite Defns** button
 - Click **Add Group** on the sub-iconed menu bar that shows up
 - Come up with a name for the **Title:** field such as “*My Satellites*”
 - Now choose the satellites you want to track. VO-52 and AO-7. have linear transponders with 2m downlinks. Visit <http://oscar.dcarr.org> for current status updates on various satellites.
 - Close the **Satellite Definitions** Tab.
- On the main iconed top menu bar click on **Next Passes**, which has a blue arrow on its icon in the top menu. You will now be able to see when the upcoming passes will over you.
- Double click on a satellite's elevation vs time graph, say VO52 which has a loud USB 2m downlink. A new tab will open showing VO52's current foot print on Earth.
 - On this new tab's sub-menu icon bar click on the **Tuning Dial** icon.
 - **VFO-A** and **VFO-B** will appear. Double click on either one.
 - Double click on the RX frequency of 145.900 MHz.
 - If your SDR has a center “spur” or a lot of noise at the center frequency, you might wish to offset 145.900 MHz by 10-20 kHz, as 144.900 MHz is the center of the transponder where most of the activity will likely take place. This can temporarily be done by using HRD's TRX slider as well.
 - Check the **RX** box next to VFO-A. Checking this box will send the Doppler corrected frequency via DDE to HSDR.

Configuring HSDR:

- Launch HSDR
- Press the F7 key to bring up the **Options** menu
- Select **DDE Client**
 - Choose **Orbitron** for **DDE Format**.
 - Click the **Manually Connect** button on the bottom left.
 - You should see “**Status: connection ok :)**” text.
 - Choose **LO** for **Sync type**.
 - Click **OK**
- Notice HRD Satellite tracker is now adjusting your LO frequency for Doppler shift.

For 1296 MHz and above EME operation where Doppler correction needs to be considered, **Moon** can be selected as the satellite to track in HRD Sat tracker under the **Add Group** section above. HRD can be configured to control your transmitting radio directly via CAT/CIV and send the Doppler corrected RX frequency to HSDR via DDE. This is an invaluable tool for quickly and automatically zero beating on another station.

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