GRT
AVIONICS

SEATTLE
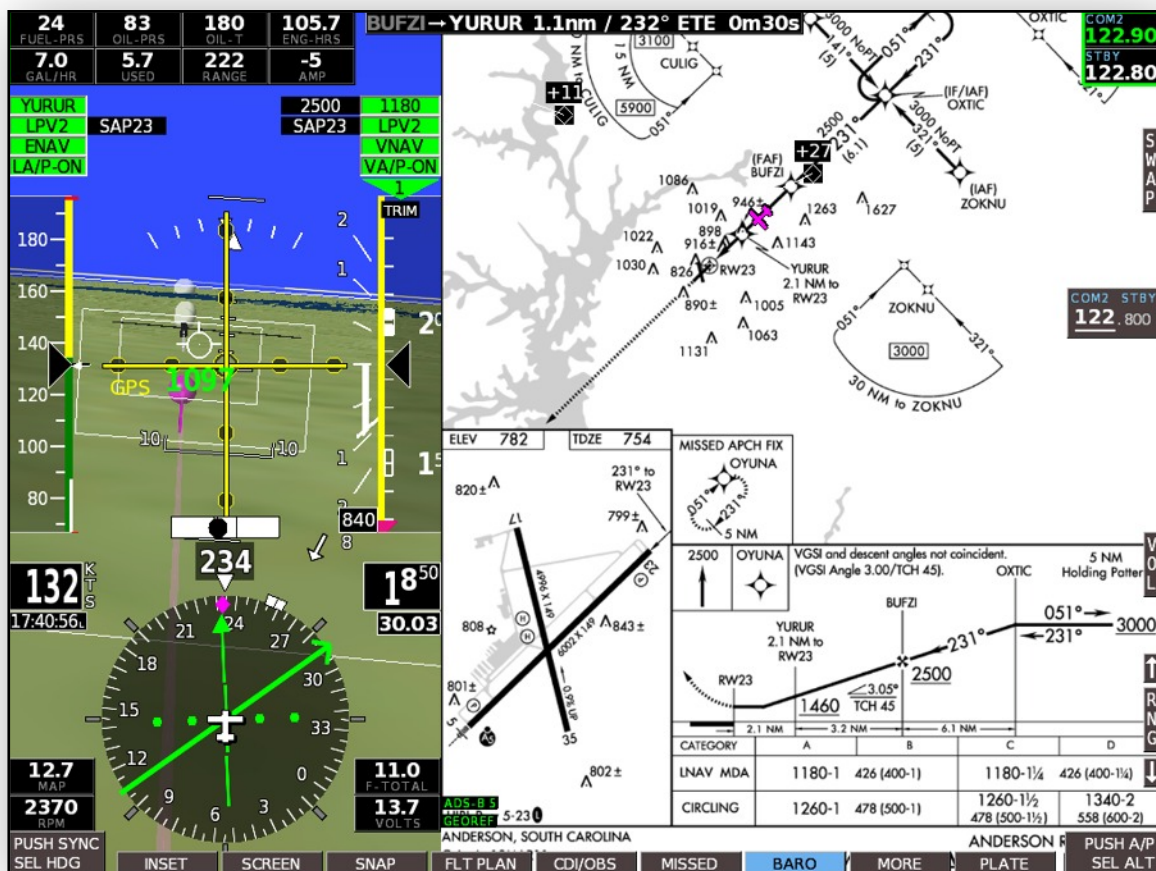**AVIONICS**
SOFTWARE
ChartData™

Geo-Referenced Charts for GRT Horizon HX & HXr

Revision A3

10-Oct-2014

ChartData™ Supplement Revision Notes

Revision	Date	Change Description
A	12-Mar-2014	Initial Draft
A1	20-Mar-2014	Initial Release
A2	7-May-2014	Section 1.2- Added note about required USB stick format
A3	10-Oct-2014	Section 1.2- Added note about possible PNY USB stick incompatibility

Table of Contents

Section 1: Introduction

1.1 About ChartData™ by Seattle Avionics

Many pilots prefer to avoid the weight, bulk and expense of paper charts in favor of electronic charts. Now GRT Horizon pilots can have all the information of current paper charts and much more– without the hassle of carrying the paper or an extra tablet.

The term "geo-referenced" means the aircraft position is superimposed upon the chart, just like a traditional GRT moving map. The flight plan, course line, heading bug, airport labels, airspace alerts, and traffic alerts are also superimposed upon the chart, giving pilots exceptional situational awareness.

Annual ChartData™ subscriptions for the Horizon HX and HXr are available directly from Seattle Avionics at http://www.SeattleAvionics.com/GRT. GRT customers can choose a VFR-only package for $99/year that includes geo-referenced Sectional Charts and airport diagrams, or an IFR package for $199/year that includes all the VFR charts plus geo-referenced Instrument Approach Procedures and IFR Low - and High-Enroute charts.

1.2 Hardware Requirements and Downloading Data

After you purchase a subscription to the Seattle Avionics ChartData™, you have to download the data to your PC or Mac then copy it to a USB flash drive for use in the Horizon unit.   To do that, log into the Seattle Avionics website at the URL below, using the email you used to purchase and the password created by the system when you purchased. You'll find both of those on the purchase receipt you'll receive from Seattle Avionics.

http://www.seattleavionics.com/GRT

This will automatically bring you to the ChartData Activity Center from where you can install the Data Manager application for Windows (more on this later) for automatic downloads, manually download data, check the status of your subscription, change your email or password, renew a subscription, or find answers to technical questions.

If you're running Windows (XP, Vista, Windows 7, or Windows 8), the best way to download data and keep current in the future is to download the small Data Manager application from Seattle Avionics. It runs silently in the background and downloads new data each month as the data becomes available. It even automatically copies the data to your device or software when it's plugged-in. Once installed, follow the program's instructions about entering your email and password, attaching the USB flash drive to your computer, and installing updated data.

If you use a Mac or another operating system, you will need to manually download some zip files each month and unzip them yourself to the USB flash drive. The links and instructions for doing so are on the Seattle Avionics Web site once you login as described above.

GRT EFIS Requirements

- Horizon HX with software version 6a or higher
- OR Horizon HXr with software version 2a or higher

USB Flash Drive Requirements

- Note that the USB flash drive (also called a "thumb drive" or "memory stick") that was included with your Display Unit does **not** have enough memory to handle the ChartData™, which can be up to 15 GB.

- Each display unit can only communicate with one USB drive at a time; Therefore, the flash drive should have enough memory for charts as well as all the storage of recorded demo files, data recording and snapshots.

- We recommend the SanDisk Cruzer 32 GB 2.0 or 3.0 flash drives, which have been tested satisfactorily. USB 3.0 can cut the initial data transfer time significantly over USB 2.0.

- The format of the USB flash drive must be **FAT32**.

- We have had several customer reports that PNY brand USB flash drives do not work.

- USB drives over 64 GB are not typically recommended due to data formatting issues, however, some brands and models do work fine. A Cruzer Glide 64 GB USB 3.0 stick reformatted for FAT32 was used successfully by one of our beta testers.

- A powered USB 2.0 hub, such as the StarTech 4-port USB Hub, p/n ST4200USBM, can be used to expand USB port connectivity if it is used for ADS-B receivers, Bluetooth, and other features.

Internet Connection Requirements

- High-speed cable Internet is highly recommended. The full VFR/IFR download can be up to 15 GB, and takes about 2 hours for a high-speed connection. Use caution when not on an unlimited data plan.

Computer Requirements

- The Seattle Avionics ChartData™ Manager requires a Windows-based PC with Windows XP or later operating system.

- Mac & Linux Users must manually download and update their charts. Instructions for this are provided on the Seattle Avionics website.

1.3 Tech Support

Please contact the Seattle Avionics ChartData™ support team with all questions about using the ChartData™ Manager, downloading difficulties, or other data-related questions.

Seattle Avionics ChartData™ Tech Support:

Email: Support@SeattleAvionics.com

Phone: (425) 806-0249

Questions regarding use and programming of your GRT display unit should be directed to our regular tech support staff at GRT Avionics.
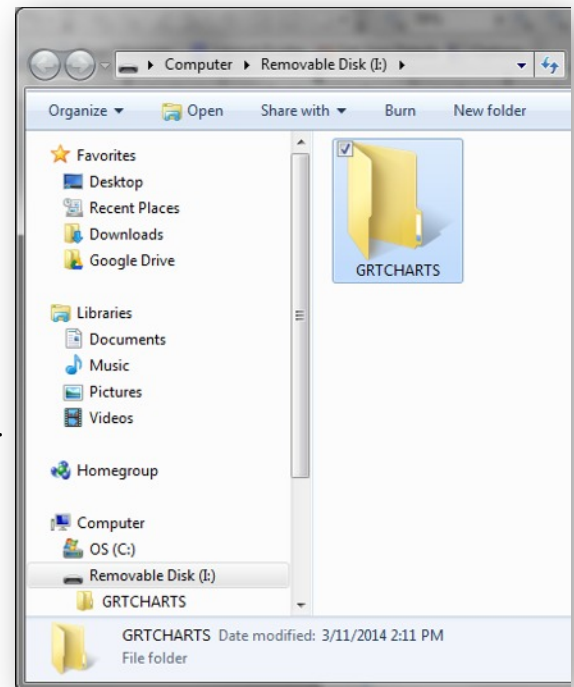
Email: BenK@grtavionics.com

Phone: (616) 245-7700

Hours: M-F, 9 AM-4 PM Eastern Standard Time

Section 2: Subscription Purchase & Download

2.1 Prepare the USB Drive

A new folder named GRTCHARTS, one word all in capital letters, must be created on the root directory of the USB drive. The Seattle Avionics Data Manager will seek out this folder and load all of the charts into it in a structure that the GRT Horizon EFIS can understand. To do this:
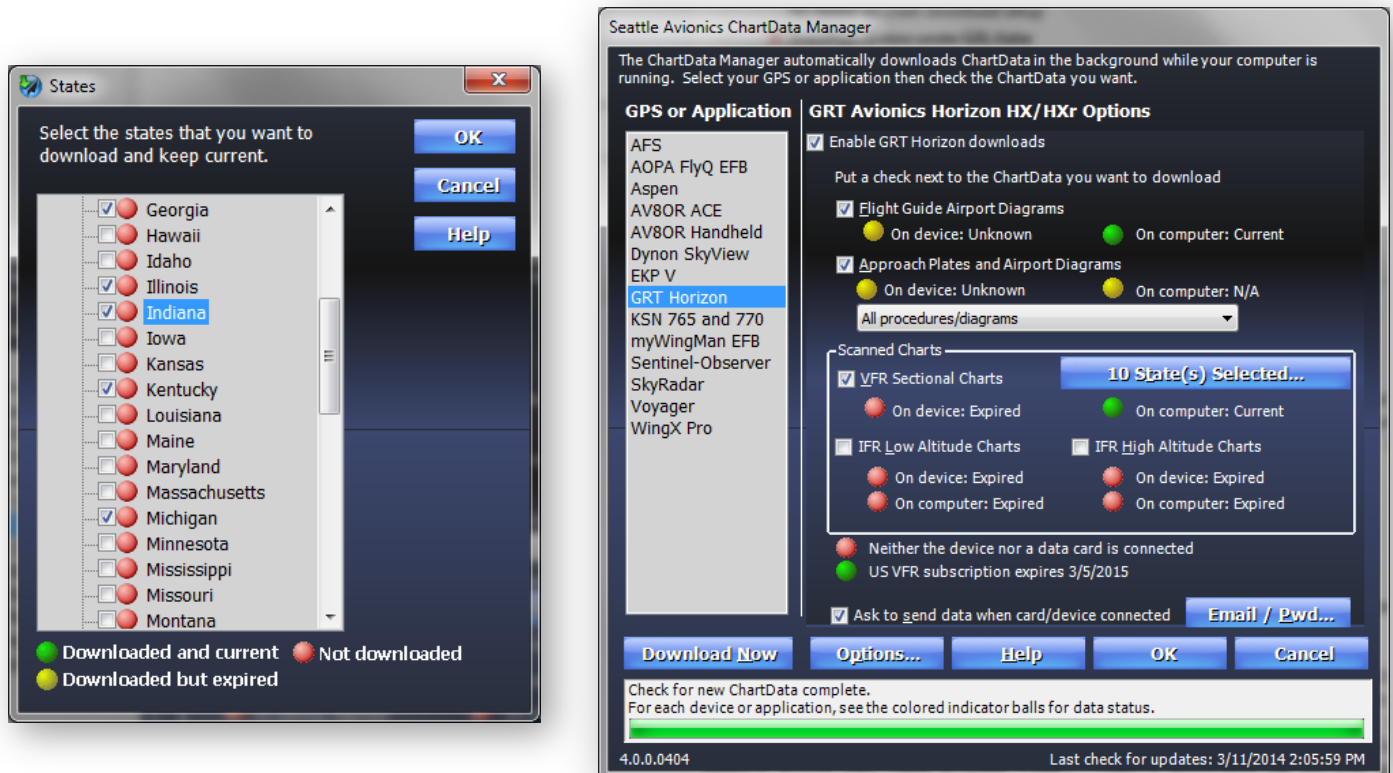
1. Install the USB drive into your computer's USB port.

2. A window may pop up that says "Auto Play." This window will also list the USB drive's name as "Removable Disk" with a letter designation. Remember this name because it will make it easier to find the USB drive on your computer. Click "Open to view files" on the Auto Play window, or find the drive letter designation under the My Computer or Computer menu item in the Start Menu. Double-click on the letter designation to open it.

3. If there is a New Folder button visible, press that. Otherwise, right-click within the window of the empty drive and select New, and then Folder.

4. Name this folder GRTCHARTS. This folder must be all one word, and must all be capitalized. NOTE: The GRTCHARTS folder must NOT be located inside any folders– it must be out in the open, in the main directory of the USB drive.

5. Your USB drive is now prepared for use with the ChartData™ Manager.

6. One USB drive is required for every GRT display unit that will display charts, however, only one subscription is required per airplane. When your GRTCHARTS USB drive is inserted into the computer's USB port, the ChartData™ Manager automatically finds it and prompts you to begin downloading updated charts onto it.

2.2 Purchase Your Subscription

1. Go to www.SeattleAvionics.com/GRT. Follow the Buy Now links to purchase your subscription.

2. You will be prompted to create a username and password for the Seattle Avionics site during the purchase process. Write this down and put it in a safe place for future reference.

3. The ChartData Activity Center page will appear.

4. Click "Download Current Data, " which displays more information, including a link to download the ChartData™ Manager to your computer. This program is basically a gateway for Windows-based computers to the Seattle Avionics download area, allowing you to control and monitor the status of your downloads.

5. Mac and Linux users: Below the link to download the ChartData™ Manager, there is a link for further instructions for manually downloading the data.
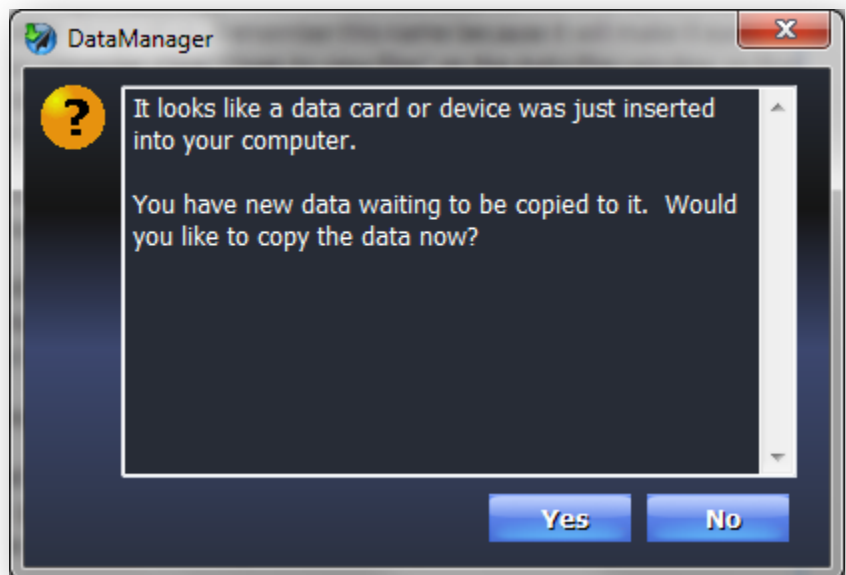

2.3 Download the Charts Using the ChartData™ Manager

1. Before beginning, turn off your computer's automatic sleep feature to avoid any delays in data processing. The first-time download and data transfer process can take up to 24 hours.

2. Open the ChartData™ Manager on your computer.

3. Note the HELP button– this leads to detailed information about how to use the ChartData™ Manager that may be useful.

4. Click the EMAIL/PWD button to sign in to the Seattle Avionics website using the username (email address) and password you set up when you purchased your subscription.

5. Click the Options button and check the box to enable background downloads. This will allow the ChartData™ Manager to operate in the background while your computer does other tasks.

6. On the main ChartData™ Manager screen, check the box for "Enable GRT Horizon Download", then check the boxes for the charts you wish to download.

7. Click the "Select States" button to choose the states you wish to download. It is recommended that you only select the states you know you will be flying through in the coming months to avoid very long download & transfer times.

8. Click the "DOWNLOAD NOW" button to begin downloading your charts to the computer.

    - NOTE: The download process varies in time, from several minutes to several hours, depending upon the amount of data selected for download and the Internet connection speed.

    - If you begin the download process with the USB drive installed in the computer, Step 9 happens automatically when the download is complete.

9. Transfer the data from the computer to the USB drive.

    - When the USB drive is inserted, the ChartData™ Manager will detect it and ask you for permission to copy the chart data from the computer to the drive.

    - After the initial download is complete, it may take several hours to finish transferring all the data onto the USB drive. This speed depends upon your computer and the data transfer speed of your USB flash drive. For a few Sectional charts, it takes only a few minutes. **For the full IFR/VFR U.S. package, the data transfer can take up to 24 hours**.

    - Do not remove the USB drive before transfer is complete.

    - The process is complete when the green status bar on the bottom of the ChartData™ Manager screen is solid and says "Last Check Complete."

    - NOTE: The full download is only required the first time you install the charts onto the USB drive. Subsequent updates will install only those charts and procedures that have changed since the last update, which significantly reduces download and data transfer time.

10. Repeat Step 9 for other USB drives for the other screens, if necessary.

Section 3: Display Unit Setup

3.1 Activate Chart Selection Menu Softkeys

NOTE: The USB drive with the chart data must be installed in the display unit **prior to boot-up.** The charts are discovered as part of the boot sequence.

To activate the chart selection menu softkeys:

1. The chart selection softkeys must be activated on the Moving Map set menu page. Press NEXT softkey (or MORE on HXr) until the SET MENU softkey label appears. Press it.

2. Using the right knob, scroll to MOVING MAP and press the knob.

3. Use the right knob to scroll to the bottom of the page until you see the settings below:

Set Menu Page	Setting	Value
Moving Map	Sectionals (SEC)	Auto or ON
	Enroute Low (LO)	Auto or ON
	Enroute High (HI)	Auto or ON

- AUTO means the chart softkeys appear whenever the display unit recognizes the ChartData™ on the USB drive during its boot-up sequence. This is the recommended setting.

- ON means the chart softkeys are always displayed regardless of whether there is ChartData™ detected, and OFF means they are never displayed.

Chart selection
softkey under
the Map
Options menu

Section 4: Selecting and Viewing Your Charts

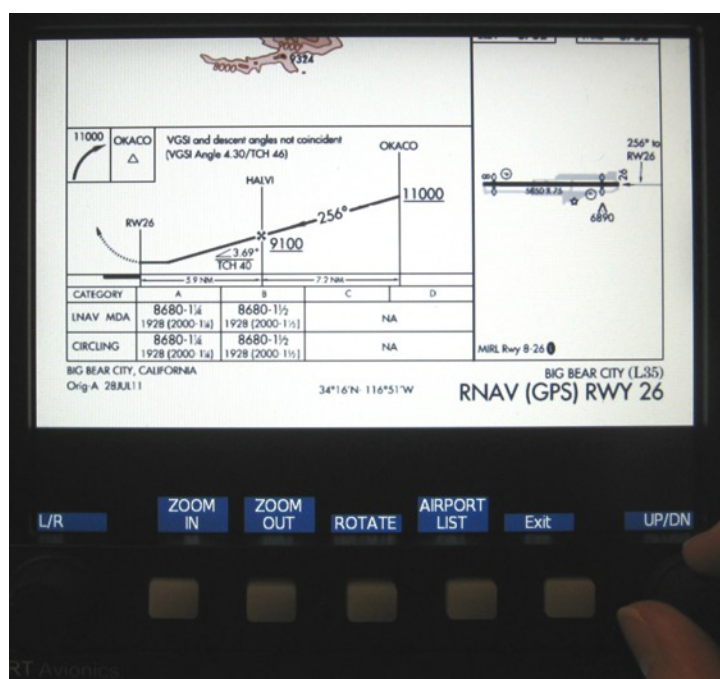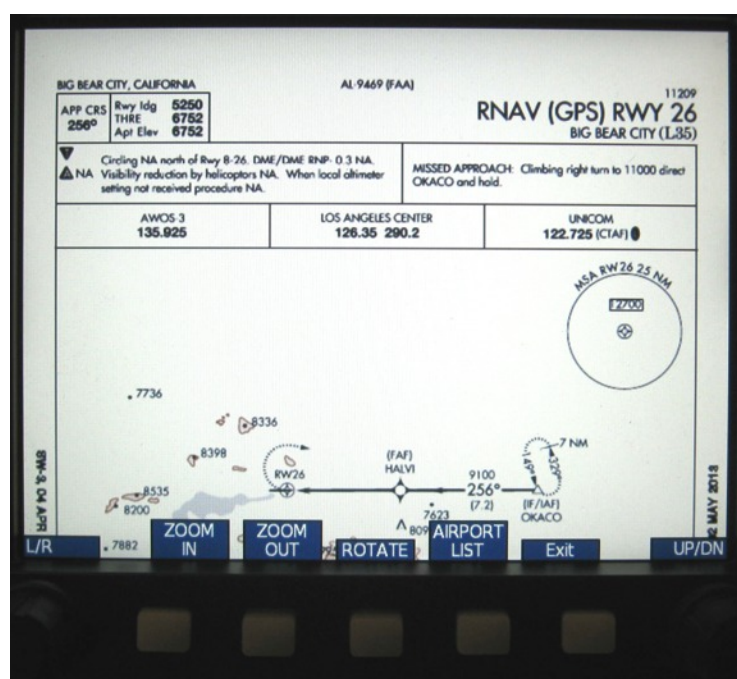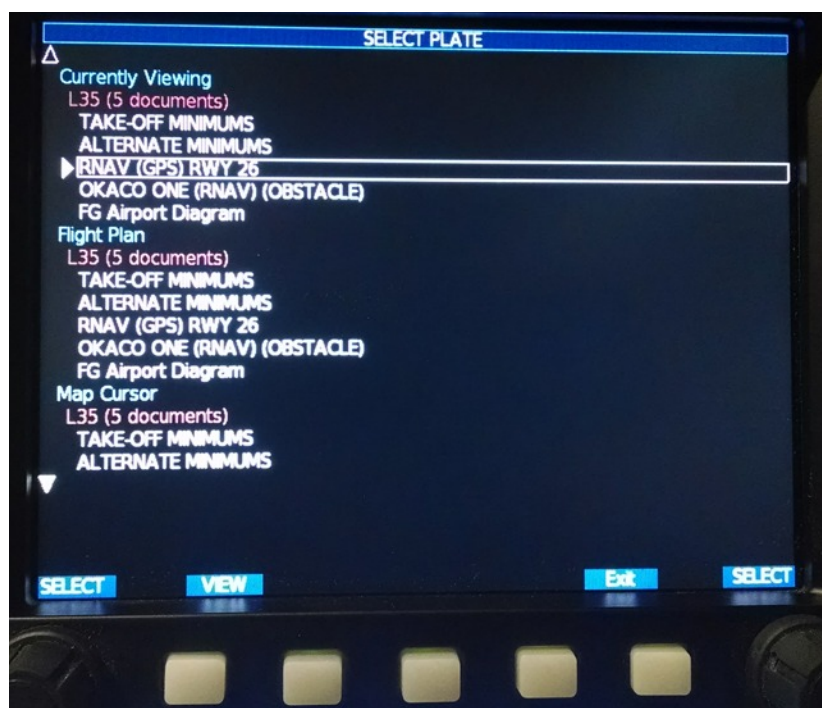## 4.1 Viewing Sectionals & Enroute Charts on HX

Sectionals and IFR Enroute charts are treated just like any other moving map background, such as terrain and weather; they are selected using the Map Options softkey menu. The Map Selection Tool works with these charts like it does with any other GRT map– Simply press the right EFIS knob to bring up the yellow cursor, then turn the knob to select surrounding airports.

1. Press the MAP softkey to bring up any map screen.

2. Press any key to activate the SHOW softkey. Press it to highlight CHART in the list of available map view options.

3. Press NEXT to view chart selection softkeys. Options are SEC (Sectional), LO Enroute or HI Enroute charts.

4. To view areas of the chart not shown on the map, either range out using the left knob, or press NEXT > SLEW to bring up arrow softkeys to slide the map away from your present location.

5. To cycle through different map views such as arc, compass rose, or north-up, press MAP softkey repeatedly until you see the one you want.

4.2 Viewing Airport Diagrams, Approach Plates, STARs or DPs on HX

1. Access the Waypoint Details page of the airport you will fly the approach into.

2. Press the PLATE softkey. This will bring up a list of approach plate and airport diagram files that are stored in the airport's folder on the USB thumb drive.

3. Use the knob to highlight the approach plate you want to see. Press the knob or press the VIEW softkey to display the plate.

4. The full-screen approach plate will automatically appear. Softkeys for zooming, scrolling, panning, and rotating the plate are displayed along the bottom of the screen.

5. Press the EXIT softkey to go back to the approach plate list for the selected airport.

6. **NOTE:** The plate will need to be reloaded if you leave it to view another screen such as PFD or Map.

4.3 Viewing Sectionals & Enroute Charts on HXr

Sectionals and IFR Enroute charts are treated just like any other moving map background, such as terrain and weather; they are selected using the Map Options softkey menu. They can be viewed in the SPLIT PFD screen view, as an Inset window, and as a full-screen map. In the full-screen view, the Map Selection Tool works with these charts like it does with any other GRT map– Simply press the right EFIS knob to bring up the yellow cursor, then turn the knob to select surrounding airports.

1. Press SCREEN > MAP OPTIONS.

2. Press the VIEW softkey to highlight CHART.

3. Select the type of chart by pressing the CHART softkey. Options are SEC (Sectional), LO Enroute or HI Enroute charts.

4. Under the VIEW softkey, select whether you want the arc view (shown below), the center view, where the aircraft is in the center of a compass rose, or north-up view.

5. To view areas of the chart not shown on the map, either zoom out using the RNG arrow softkeys above the right knob, or press SLEW to bring up arrow softkeys to slide the map away from your present location.

6. Press HOME to restore the main "home screen" softkeys.

4.4 Viewing Airport Diagrams, Approach Plates, STARs or DPs on HXr

Approach plates, airport diagrams, STARs, DPs and minimums are loaded using PLATES softkeys. They can be viewed alongside the PFD in the PFD/PLATE view, or alongside the map in MAP/PLATE view. These types of charts, which traditionally come bound together in the U.S. Terminal Procedures books, are all referred to as "plates."

You will most likely choose one home screen for viewing plates. Pilots with a single HXr always use the PFD/PLATE screen to keep their primary and navigation instruments up while viewing plates. Pilots with multiple screens can display plates alongside the map on a second screen if desired.
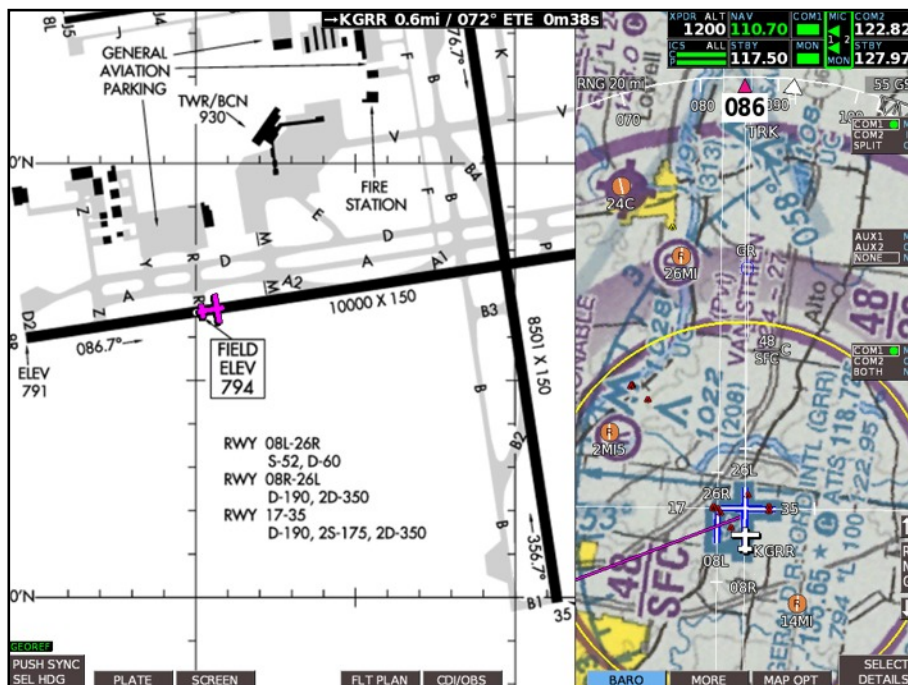
To load a plate from the PFD/PLATE Screen:

1. From the main PFD home screen, press SCREEN > PFD PLATE to access the PFD/Plate view.

2. Press PLATE > LIST to display a list of approach plates, beginning with your destination waypoint, if it is an airport. Plates for airports along your flight plan are also listed.

3. Use the right knob to highlight the procedure or airport diagram. Press the knob to select and display it.

4. Any time after the plate is loaded, you may press the PLATE softkey again to access controls for panning and zooming the chart and turning the traffic display on or off. When finished, press HOME to restore the main softkeys.

To load a plate from the MAP/PLATE Screen:

1. From the main Home screen, press SCREEN > MAP/PLATE to access the map/plate view.

2. Load and view plates by pressing PLATE just as you did on the PFD/PLATE view. Note that the PLATE softkey is now on the left side of the screen, under the plate.

3. The MAP OPT softkey is on the right side, under the map. Press it to change the map/chart background alongside the plate.

To load a plate from the Waypoint Details Screen:

Sometimes it is desirable to load an approach plate from the waypoint details screen, either from the flight plan or by selecting the airport off the map. Here is how to do it:

1. Access the Waypoint Details page of the airport you will fly the approach into.

2. Press the PLATE softkey. This will bring up a list of approach plates and procedures for that airport that are loaded onto the USB drive.

3. Use the right knob to highlight the plate you want to see. Press the knob to select, or press the VIEW softkey to display the plate.

4. The MAP/PLATE screen will automatically appear, with the plate on the left and moving map on the right. Softkeys for zooming, scrolling, panning, and rotating the plate are displayed along the bottom of the screen.

5. Press the HOME softkey to bring up the regular home screen softkeys; note that the MAP/PLATE split screen view stays up. Press the PLATES softkey at any time to display the zoom and scroll controls for the approach plate again.

NOTE: The MAP/PLATE view functions as a Home screen. To switch back to primary flight display or full map screen, press SCREEN softkey, then select PFD, MAP, or MAP/ENG as appropriate.