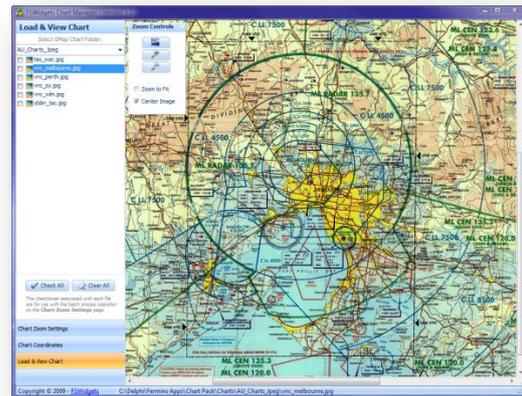


# GMap for X-Plane – Chart Calibration Tutorial

This is a step-by-step tutorial on how to create calibrated charts for the *GMap for X-Plane* freeware moving map system, originally release for FSX by *FSWidgets* in May 2008.

This document focuses on how to use the free *Chart Manager* utility that ships with all editions of GMap, a tool also included in GMap-compatible *Chart Pack (Download)* products purchased from the [FSWidgets Shop](#).

Charts can of course be calibrated manually using the information outlined in the *GMap Chart Supplement* PDF document supplied with GMap, but we recommend using the *Chart Manager* to help guide you through the process.



The FSWidgets Chart Manager

## Step 1 - Preparing the Chart Image

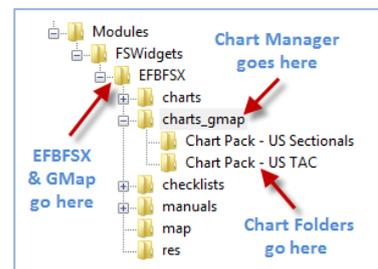
The first thing you need to do is acquire a scanned or downloaded chart image (Sectionals, Terminal Area, IFR En-route, etc). The image needs to be saved in JPG format and must have latitude and longitude information printed on them which will then be used to calibrate the chart.

### *What size should the image be?*

This really depends on how you intend to use it. The higher the resolution, the better the chart will look when zoomed in. The lower the resolution, the sharper it will look when zoomed out. Also, as a general rule, the larger the image the more it slows down the movement of the Google Map display, so a good balance is required. As a guide, check out the full-sized samples included with GMap, or download them from the [FSWidgets Downloads](#) page.

### *Where does the JPG image need to be placed?*

All GMap charts should be placed in sub-folders under the folder where you have the *Chart Manager* utility. By default this will be the *charts\_gmap* folder. This is one level below the *GMap for X-Plane* application (*FSWidgetsGMap.exe* file) or the *EFBXP.exe* file (See example on right).



If you have set up a custom folder for storing charts then the charts should be stored in sub-folders under the folder specified in the *FSWidgetsGMap.ini* file (please see the *GMap Chart Supplement* PDF document for more details on how to set up a custom charts folder). The *Chart Manager* utility should of course be in the custom charts folder, one level above the chart sub-folders.

Whether using the default or a custom chart folder location, we recommend using short but unique names for the chart sub-folders (e.g. *US Sectionals* or *US IFR Low*).

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## Step 2 – Selecting the JPG Image in Chart Manager

Launch the *Chart Manager* utility. On the *Load & View Chart* panel use the *Select GMap Charts Folder* drop-down menu to select the chart folder that contains the JPG image you wish to calibrate (see *Image 1*). Once the folder is selected, all the JPG images in that folder will be displayed in the file list box (see *Image 2*). If no chart folders are listed in the menu it means no sub-folders are present, or the utility is not in the main folder, one level above the chart sub-folders.

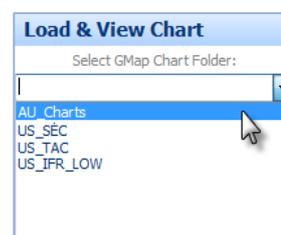


Image 1

Next, click on the desired JPG image. This loads a preview of the chart in the workspace to the right. Now may be a good time to pan around and look for relevant latitude and longitude information. The required data for the calibration is the latitude of the top/bottom edges of the image, and the longitude of the left/right borders of the image.

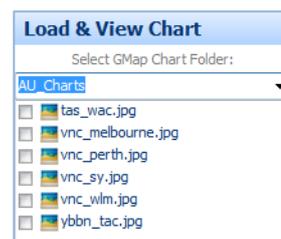
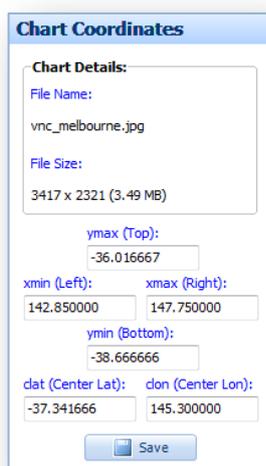


Image 2

### *A Big Tip to Make Calibration Easier!*

One good idea is to load the charts JPG into a graphics editor like *PhotoShop* or *PhotoImpact* and crop the chart along the lines of latitude and longitude as the edges of many charts are blank anyway. When you do this, also take note Lat/Lon values of each edge as this is what you will need to enter on the next step.

## Step 3 – Enter the Calibration Information

A screenshot of the 'Chart Coordinates' window. It contains several input fields and labels: 'Chart Details:' section with 'File Name:' (vnc\_melbourne.jpg) and 'File Size:' (3417 x 2321 (3.49 MB)). Below that are 'ymax (Top):' (-36.016667), 'xmin (Left):' (142.850000) and 'xmax (Right):' (147.750000), 'ymin (Bottom):' (-38.666666), and 'dat (Center Lat):' (-37.341666) and 'dlon (Center Lon):' (145.300000). A 'Save' button is at the bottom.

After loading an image, go to the *Chart Coordinates* panel. It will display the filename and the size of the image. You are now ready to enter and save the Lat/Lon information for the edges of the chart (see image on the left). All six listed Lat/Lon values are required.

### *General Tips*

1. Use digital Lat/Lon values, with 6 decimal places.
2. Southern latitudes are negative, as are Western longitudes.

### *Other Notes*

The Center Lat/Lon does not need to be the actual center of the chart. You can also use the Lat/Lon of a VOR or other main feature.

If you decide *not* to crop a chart as recommended above and there are white margins keep in mind the Lat/Lon values must correspond to the *edges of the image*, not of the chart. Many charts have white space around them. In these cases you will have to extrapolate the Lat/Lon values to account for any white space, or use any accompanying geo-referencing data if that is provided.

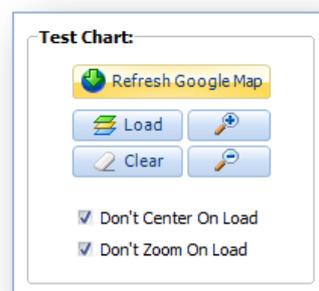
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## Step 4 - Testing the Chart

To check that the chart lines up, first click the [Open Google Map](#) button (this button then changes to [Refresh Google Map](#) as shown on the right) and then allow the built-in Google Map display to fully load before moving on to the next step.

When the Google Map display is ready, click the [Load](#) button. The Google Map display will re-position itself to the center or middle Lat/Lon of the chart. Be patient as larger charts may take a few seconds to fully load and display. The chart will be overlaid on the Google Maps display.



Assuming the Lat/Lon values were accurate the chart should line up reasonably well, but if further adjustments are needed, do the following:

1. Enter a new Lat/Lon value.
2. Click the [Save](#) button.
3. Click the [Load](#) button again to view the results.

### *Fine Tuning Tip*

If you are making repeated adjustments, especially when attempting to line things up along the edges of a chart, you may wish to check the [Don't Center on Load](#) and [Don't Zoom on Load](#) options. This prevents the Google Map from zooming out to the default value or panning to the middle Lat/Lon so you can more quickly see if the new values you are entering are lining up better. This is especially useful when attempting to line up distinctive features along the edges of the chart with the underlying Google Map display (e.g. lakes and roads). Keep in mind though that Google Maps is a Mercator projection and many aeronautical charts are Lambert Conformal so perfect alignment is not always possible.

## A Quick Word about the Chart Zoom Settings

On the [Chart Zoom Settings](#) panel you have the option to specify a custom initial zoom setting for each individual chart, or you can batch apply a zoom setting to a group of charts. Normally, GMap handles this value automatically, but if you find a different zoom setting works better for the chart you are calibrating you can adjust that here. Any saved custom zoom setting will then be used when you click the [Load](#) button on the [Test Chart](#) function (see [Chart Coordinates](#) panel – and to see the result make sure you have the [Don't Zoom On Load](#) option unchecked of course!). More information and reminders can be found in the gray GUI-embedded notes on the [Chart Zoom Settings](#) panel.

**(End of document)**