

CHALK RIVER GRAPHICS

CrgSim Maps Documentation

Installation and User's Guide

Chalk River Graphics

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Forward

CrgSim provides the ability to display a “real life” sized Primary Flight Display (PFD), Nav Display (ND), and EICAS Display for users of Flight Simulator X. Two PFDs, two Nav displays, two CDUs, one EICAS display, two annunciator panels, and two Map display are available. One set of a PFD and Nav for the Captain, one set of a PFD and Nav for the First Officer, and one shared EICAS. The instruments may be run on a different computer (or computers) than the one the simulator is executing on.

The Moving Map display software is a part of the CrgSim distribution and includes a few maps to demonstrate the display capabilities. “Three Map Packs” can be downloaded from www.CrgSim.com.

Crgmap.exe uses legacy graphics so it is possible it may run on XP machines. If you have an older XP machine it may be worth the time to try to run the Map display on that computer.

So for step number ONE if you have not already done so download the CrgSim distribution zip file. Read the included documentation and install the components from that package that you want to run.

Please read all the documentation from the main instrument distribution package.

If you find a problem with the software please let us know. The web site is at www.crgsim.com. It is read-only since we ran out of time trying to clear the spam from the site. We can be reached at sim30@crgsim.com

Thanks and enjoy.

CrgMap Installation

The maps programs install like the rest of the CrgSim instruments. Decide which computer CrgMaps will run on and copy the appropriate directory there. There are two map programs that can be used: CrgMapsLeft and CrgMapsRight. If you install just one map program use “CrgMapsLeft”.

Note: “Install” in CrgSim means copy a directory. To uninstall just delete the directory. CrgSim does not modify your windows registry.

Managing Your Maps

When CrgSim maps needs a map it will look in several places depending on your configuration:

- If you have specified a map directory in the configuration file (recommended) it will look there.
- Otherwise it will look in the “Maps” directory in either M00, M01, M05, M10 depending on the scale of the map.

The map directory is recommended since it will allow updating CrgSim without the need to change existing maps. Especially useful if additional map paks have been downloaded.

On an initial installation to create a map directory (assume CrgMapsLeft):

- Create a directory to hold all of the maps (for example: <c:\CrgMaps>). Use what ever directory name you desire.
- Copy the directories M00, M01, M05, and M10 from the CrgMapsLeft distribution to the new map directory.
- Add to the “mapsdir” line to the configuration file (see maps configuration).
- Once you verify that the new maps directory contains M00, M01, M05, and M10 and that each of these sub directories contains the maps in the original distribution directory you can delete the “Maps” directory in CrgMapsLeft to save space.

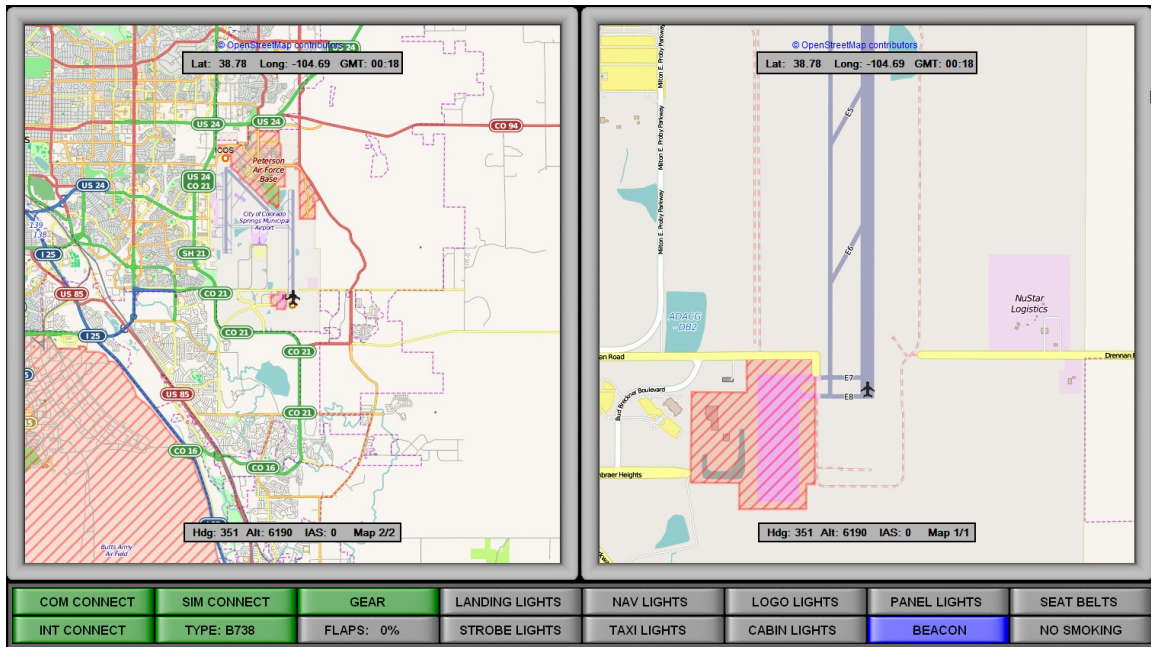
If you create a map directory it is only necessary to do the steps above once.

The initial installation of CrgMapsRight requires a few more steps. To save space maps are not included in the distribution for CrgMapsRight. The CrgMapsRight maps directory is empty. If you want to use CrgMapsRight just copy the Maps directory from CrgMapsLeft to CrgMapsRight and proceed as above.

If both map programs are run on the same computer they can use the same map directory (<c:\CrgMaps>) as described above. If the map programs are run on different computers it is necessary to have a copy of maps on each computer.

With both map programs running it is possible to have one map program display a large section of the flight area and the other map display a more detailed map.

The image on the next page shows two maps and the right annunciator displayed on the same screen.



www.openstreetmap.org/copyright

Map Details

The CrgSim maps directory is created when you unzip the distribution file. Within this new directory are two directories (MapsLeft and MapsRight) that contain the programs “CrgMapsLeft.exe” and “CrgMapsRight”. Each directory also contains a few image files used when the programs are executing. In the MapsLeft directory there is a directory called “Maps” that contains: M00, M01, M05, and M10. The M10 directory contains maps that are slightly larger than a 10 degree rectangle of latitude and longitude. The M05 directory contains 5 degree rectangles, the M01 directory contains more detailed maps of varying size, and the M00 maps are closeup maps of selected airports.

The main map distribution package contains 4 levels of maps (M10, M05, M01, and M00) for:

- Seattle, Wa.,
- Colorado Springs, Co.
- Frankfurt, Germany.

There are three additional map packages available described at the end of this document.

Each additional map distribution contains the same 4 directories. To install any or all of these packages just copy the contents from each directory to the corresponding directory of the main installation. You can verify the correct location of each map. Maps beginning with M10xxx belong in the M10 directory, M05xxx maps belong in the M05 directory, and so on.

Please read the paragraph in the main documentation file containing suggestions on where to locate the CrgSim directories.

The Map Display “should” run with all of the default FSX planes and most of the FSX add-ons as long as the simulator aircraft keeps FSX informed of the current latitude and longitude.

Maps Copyright

The cartography is from www.openstreetmap.org. OpenStreetMap is *open data*, licensed under the [Open Data Commons Open Database License](http://www.openstreetmap.org/copyright) (ODbL). For full copyright information please go to:

www.openstreetmap.org/copyright

Further information on the Open Database License is available at:

www.opendatacommons.org

and

www.creativecommons.org

Maps Coverage

To keep the download manageable just a few maps are included in the normal CrgSim distribution. They include a map centered on SeaTac Airport located in the state of Washington, 3 map levels for Frankfurt, Germany and 3 map levels for Colorado Springs, Co.

To test CrgMaps select one of these locations in your flight simulator. You can try out the 4 levels of map detail while on the ground. For testing the moving map feature you will have to fly around the local area. The map display will automatically change map levels if you fly out of the coverage of the most detailed map.

Additional map packages are available at:

www.crgsim.com

At this time the maps cover the United States, parts of Canada, Central America, parts of South America, Australia, New Zealand, and most of Europe to Western Russia.

Map Package Coverage

- CrgPak1 - 40S to 40N, 130W to 80W (U.S., parts of Canada, Central America, parts of South America) These are mainly level 4 maps.
- CrgPak2 - 20S to 40S, 110E to 180E (Australia and New Zealand) These are mainly level 4 maps
- CrgPak3 - 30N to 60N, 10W to 40E (Most of Europe to Western Russia) Mainly level 3 maps with some level 4 maps.

If no map is available for the aircraft location then a “No Map Available” message will display on the screen.

Map Description

The aircraft is represented with a symbol in the center of the display. When nearing the edge of a map, the map stops moving while the aircraft symbol moves to the edge of the map tile. When the aircraft moves to another map the aircraft symbol will appear on the opposite side of the display and move toward the center of the new map. The maps are fairly large so map change should be infrequent.

The display from CrgMaps is expected to show well at instrument sizes up to approximately 850x850 pixels.

There are 4 levels of map detail:

- Map level 4 covers approximately a 10 degree lat/long rectangle.
- Map level 3 covers approximately a 5 degree lat/long rectangle.
- Map level 2 varies but usually covers about a ½ to a 1 degree lat/long rectangle.
- Map level 1 covers the smallest area (most detail). There are just a few level 1 maps.

Local AI traffic, out to about 20 Km, will display on the maps. The altitude of the AI aircraft will be displayed below the AI aircraft symbol. If the aircraft flies below 1000 feet above ground level then the altitude above ground level will be displayed above the aircraft symbol in red.

In the image of the level 2 map, several pages below, there is one AI aircraft displayed flying at an altitude of 27000 feet.

If a CrgSim flight plan has been loaded then waypoints within the map boundaries will be displayed on the map along with the waypoint names.

How to Select Map Detail

Map level may be selected by:

- pressing tab+1, tab+2, tab+3, or tab+4 while the FSX screen is selected or
- selecting the map window and pressing a number key 1, 2, 3, or 4.

The number key to map level is:

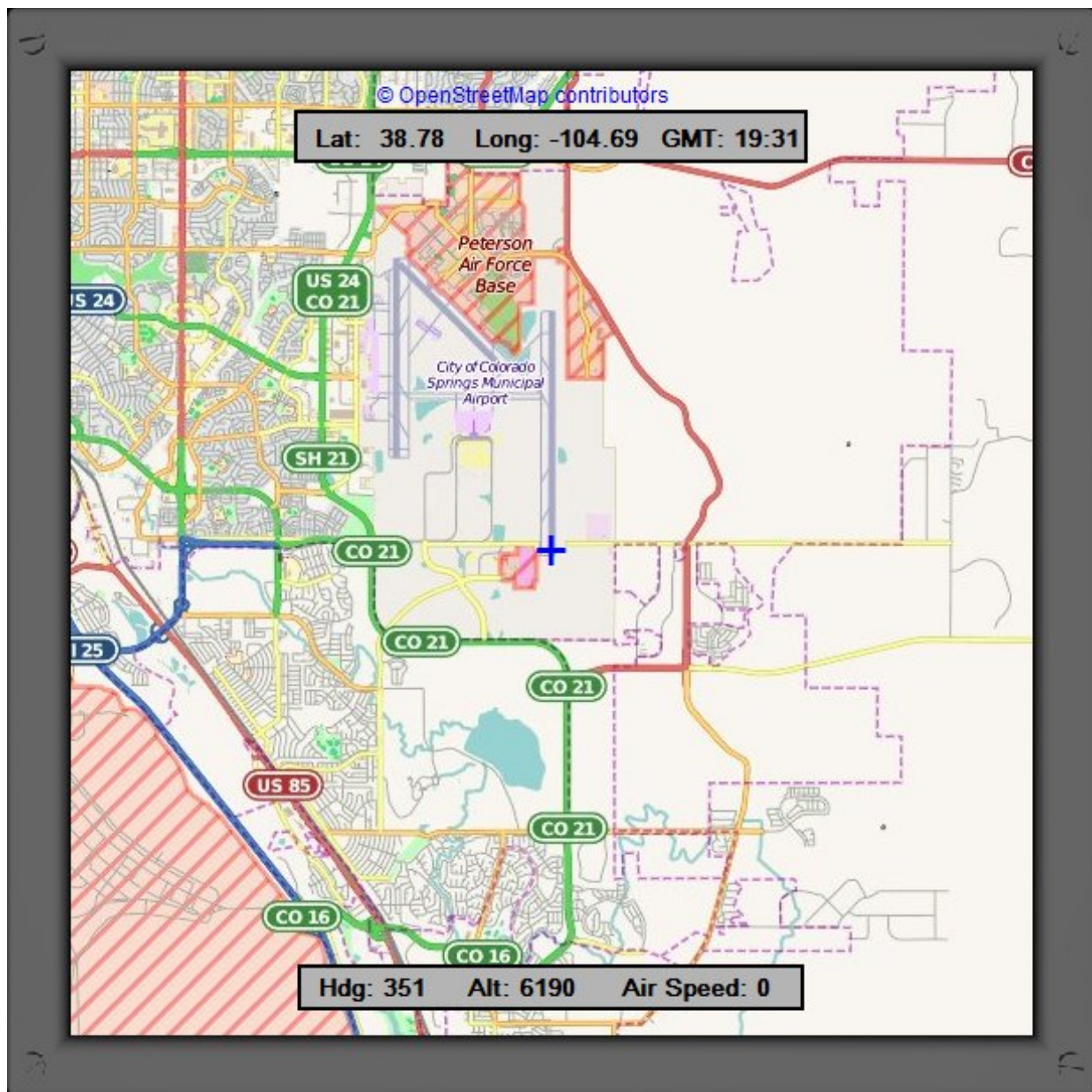
- Key 1 - enable display of level 1 maps
- Key 2 - enable display of level 2 maps
- Key 3 - enable display of level 3 maps
- Key 4 - enable display of level 4 maps

CrgMaps will use the selected map detail if a map is available at the current aircraft latitude and longitude. If a map is not available at the selected detail it will look for a larger coverage maps until one is found (if a map exists) for the current location. For example if map level 2 is selected but the only map for the location is map level 4 then map level 4 will be used. If the aircraft flies into an area that has level 2 map then the display will automatically switch to a level 2 map.

Display Nav Aids, Airports, and Waypoints.

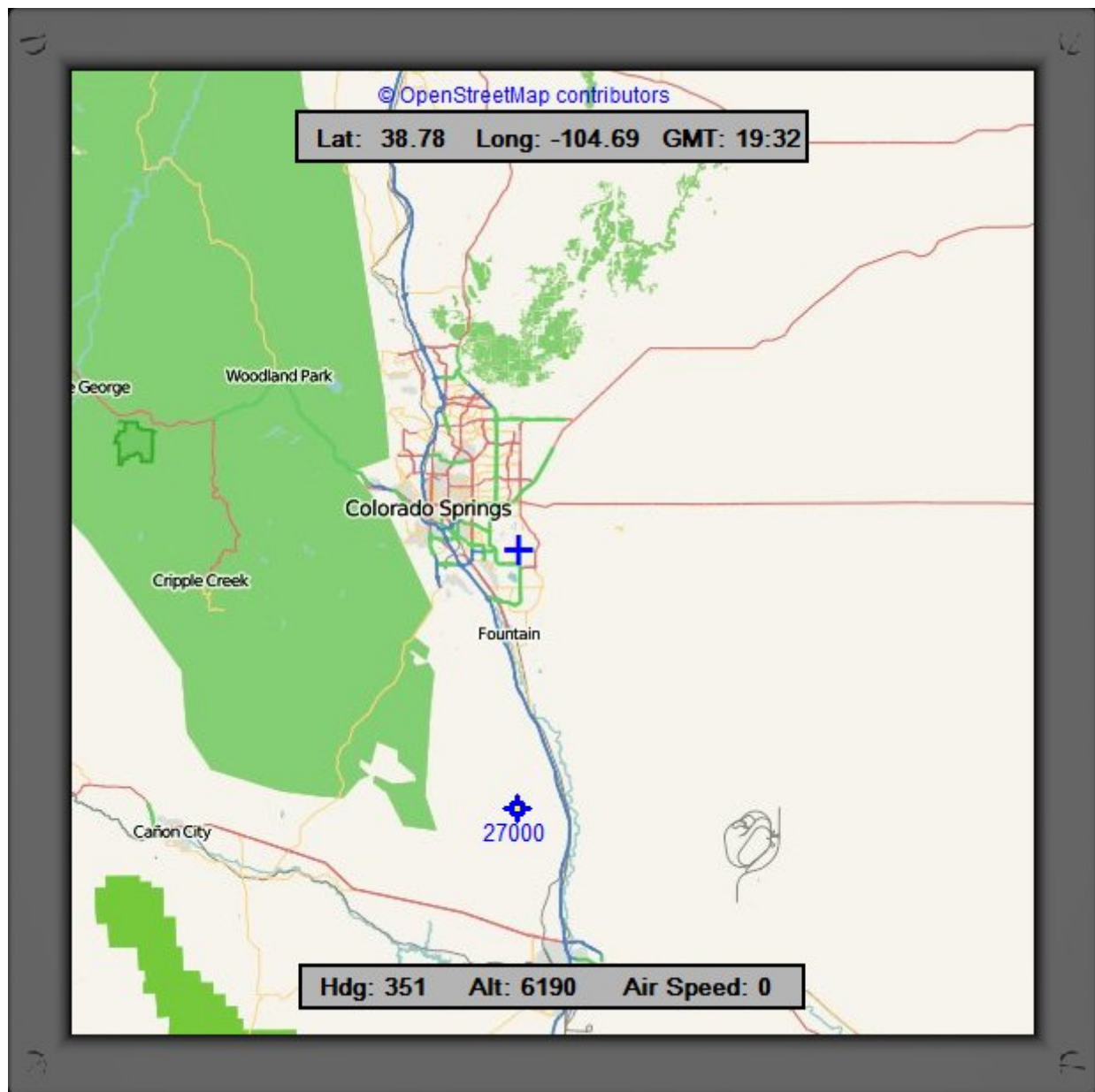
These features will display on the selected map based on the Nav Display selections on your aircraft. NavAids, waypoints, and airports are displayed as:

- NavAids - an orange circle with a white dot in the center.
- Waypoints - a blue circle with a white dot in the centered.
- Airports - a green circle with a white dot in the center.



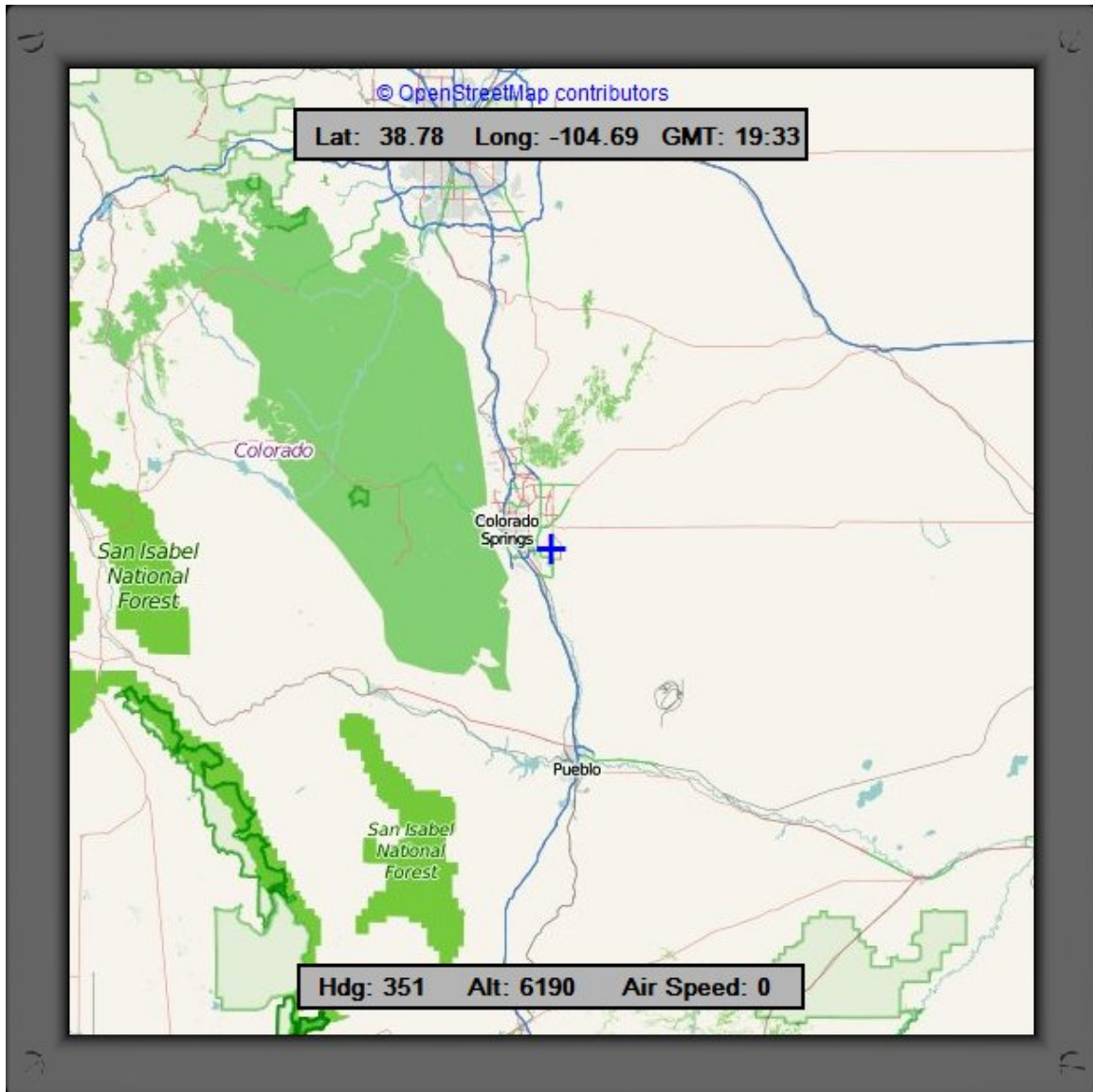
www.openstreetmap.org/copyright

The image above shows a map level 2 display centered on Colorado Springs, Colorado.



www.openstreetmap.org/copyright

The image above shows a map level 3 display centered on Colorado Springs, Colorado.



www.openstreetmap.org/copyright

The image below shows a map level 4 display centered on Colorado Springs, Colorado.

Config File

On startup crgmaps.exe looks for a configuration file in the same directory. If it finds a file named crgmaps.cfg it will open the file and read the contained parameter values.

Instrument size and location can be specified in the configuration file crgmaps.cfg as well as a command to display (or not) the bezel.

The map program uses winx, winy, height, width, and bezel, the same as the instruments in the main distribution. There is one extra parameter that can be used if you want to rotate the map display by 90 degrees clock wise or counter clockwise. You can also invert the map display.

The parameter is “rot” and the allowed value are cw, ccw, invert, and none. If you want no rotation the “rot” parameter can be omitted.

You can configure Maps by clicking on the map display and then pressing the F2 key. The setup display lets you set the map size, map location, and whether or not there is to be a bezel around the map. To make the selections permanent press the F3 key.

The “rot” parameter is not settable through the setup screen. It is necessary to open the configuration file and set the “rot” selection with an editor.

MapsDir Option

If you want to create and use a maps directory the “mapsdir” parameter tells the maps program where to look for the maps. The example below assumes that the “[c:\CrgMaps](#)” directory exists on the computer:

```
mapsdir “c:\CrgMaps”
```

The quotes are necessary.

ThinBezel Option

Depending on the configuration a thinner than normal bezel may look better on the map display. A thin bezel can be specified with the following line added to the configuration file:

```
thinbezel yes
```

The screen with two maps and an annunciator near the beginning of this document shows the thin bezel.

SETUP	
XLOC	1775
YLOC	116
WIDTH	575
HEIGHT	575
Move Left	Left Arrow
Move Right	Right Arrow
Move Down	Down Arrow
Move Up	Up Arrow
Smaller Window	-
Larger Window	+
Done	F2
Save Parameters	F3
TO TERMINATE PROGRAM: EXIT SETUP THEN PRESS ESCAPE	

When making large changes in the map size (after saving the selections with F3) it will be necessary to **close and restart** the map program to properly size the maps..

Smaller map sizes do not make the actual map smaller, instead a smaller map area is displayed in the window so the full resolution is always available.

Map Requests

Suggestions for any changes or additions to information displayed on the maps is always welcome.

Also check out the www.openstreetmap.org site. They can always use help in adding to the map coverage and detail.

Enjoy.

MAP Package Descriptions

CrgPak1

10 Degree Maps

40S to 40N 130W to 80W

(U.S., parts of Canada, Central America, and part of South America)

OSM01 - OSM23 (OSM04 and OSM19 in Base)

5 Degree maps

Seattle Area	OSM01 (In Base)
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Denver/Springs	OSM02 (In Base)
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1 Degree Maps

Colorado Springs	OSM01 (In Base)
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Denver	OSM02
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Denver East	OSM03
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Laguardia Area	OSM09
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Dallas	OSM11
--------	-------

Atlanta	OSM15
---------	-------

San Francisco	OSM18
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Seattle	OSM19 (In Base)
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CrgPak2

10 Degree Maps

20S to 40S 110E to 180E
(Australia and New Zealand)

OSM24 - OSM40

5 Degree Maps

Sydney Area	OSM35
Auckland Area	OSM36
Wellington Area	OSM37
East Melbourne Area	OSM38
Hobart Area	OSM39
Batemans Bay	OSM40

1 Degree Maps

Sydney	OSM12
Christ Church	OSM13
Auckland	OSM16
Melbourne	OSM17

CrgPak3

10 Degree Maps

30N to 60N 10W to 40E
(Most of Europe to Western Russia)

OSM41 - OSM52 (OSM45 in Base)

5 Degree Maps

OSM09 - OSM34 (OSM11 in Base)

1 Degree Maps

Gatwick	OSM04
Heathrow	OSM05
Glouster	OSM06
Schipol	OSM07
Venice Airport	OSM08
Charles DeGaulle	OSM10
Dublin Airport	OSM14
Frankfurt	OSM21 (In Base)

Maps Listed By Numerical Order

10 Degree Maps

M10001	30N-40N	70W-80W	PAK1
M10002	30N-40N	80W-90W	PAK1
M10003	30N-40N	90W-100W	PAK1
M10004	30N-40N	100W-110W	Base
M10005			
M10006	0N-10N	70W-80W	PAK1
M10007	0N-10N	80W-90W	PAK1
M10008	10N-20N	80W-90W	PAK1
M10009	10N-20N	90W-100W	PAK1
M10010	10N-20N	100W-110W	PAK1
M10011	20N-30N	80W-90W	PAK1
M10012	20N-30N	90W-100W	PAK1
M10013	20N-30N	100W-110W	PAK1
M10014	40N-50N	70W-80W	PAK1
M10015	40N-50N	80W-90W	PAK1
M10016	40N-50N	90W-100W	PAK1
M10017	40N-50N	110W-120W	PAK1
M10018	40N-50N	120W-130W	Base
M10019	0N-10N	60W-70W	PAK1
M10020	0N-10N	50W-60W	PAK1
M10021	40N-50N	100W-110W	PAK1
M10022	40N-50N	60W-70W	PAK1
M10023	30N-40N	110W-120W	PAK1

M10024	30S-40S	150E-160E	PAK2
M10025	20S-30S	150E-160E	PAK2
M10026	40S-50S	140E-150E	PAK2
M10027	30S-40S	140E-150E	PAK2
M10028	30S-40S	130E-140E	PAK2
M10029	30S-40S	120E-130E	PAK2
M10030	30S-40S	110E-120E	PAK2
M10031	20S-30S	110E-120E	PAK2
M10032	10S-20S	120E-130E	PAK2
M10033	10S-20S	130E-140E	PAK2
M10034	10S-20S	140E-150E	PAK2
M10035	30S-40S	170E-180E	PAK2
M10036	40S-50S	170E-180E	PAK2
M10037	40S-50S	`160E-170E	PAK2
M10038	20S-30S	120E-130E	PAK2
M10039	20S-30S	130E-140E	PAK2
M10040	20S-30S	140E-150E	PAK2
M10041	50N-60N	20E-30E	PAK3
M10042	40N-50N	20E-30E	PAK3
M10043	30N-40N	20E-30E	PAK3
M10044	40N-50N	10E-20E	PAK3
M10045	40N-50N	0E-10E	Base
M10046	40N-50N	0W-10W	PAK3
M10047	50N-60N	0W-10W	PAK3
M10048	50N-60N	0E-10E	PAK3
M10049	50N-60N	10E-20E	PAK3
M10050	30N-40N	30E-40E	PAK3
M10051	40N-50N	30E-40E	PAK3
M10052	50N-60N	30E-40E	PAK3

5 Degree Maps

M05001	45N-50N	120W 125W	Base
M05002	35N-40N	100W 105W	Base
M05003			
M05004			
M05005			
M05006			
M05007			
M05008			
M05009	50N-55N	5E-10E	PAK3
M05010	45N-50N	0E-5E	PAK3
M05011	45N-50N	5E-10E	Base
M05012	55N-60N	5E-10E	PAK3
M05013	50N-55N	10E-15E	PAK3
M05014	45N-50N	10E-15E	PAK3
M05015	40N-45N	10E-15E	PAK3
M05016	35N-40N	10E-15E	PAK3
M05017	40N-45N	15E-20E	PAK3
M05018	40N-45N	0E-5E	PAK3
M05019	40N-45N	5W-0W	PAK3
M05020	35N-40N	5W-0W	PAK3
M05021	40N-45N	5W-10W	PAK3
M05022	35N-40N	5W-10W	PAK3
M05023	45N-50N	5W-0W	PAK3
M05024	50N-55N	5W-0W	PAK3
M05025	50N-55N	0E-5E	PAK3
M05026	50N-55N	5W-10W	PAK3
M05027	55N-60N	5W-10W	PAK3
M05028	50N-55N	15E-20E	PAK3

M05029	45N-50N	15E-20E	PAK3
M05030	40N-45N	5E-10E	PAK3
M05031	45N-45N	0W-5W	PAK3
M05032	55N-60N	10E-15E	PAK3
M05033	55N-60N	15E-20E	PAK3
M05034	55N-60N	0W-5W	PAK3
M05035	30S-35S	150E-55E	PAK2
M05036	35S-40S	170E-75E	PAK2
M05037	40S-45S	170E-75E	PAK2
M05038	35S-40S	145E-50E	PAK2
M05039	40S-45S	145E-50E	PAK2
M05040	35S-40S	150E-55E	PAK2

1 Degree Maps

M01001	Colorado Springs	Base
M01002	Denver	PAK1
M01003	KDEN	PAK1
M01004	Gatwick	PAK3
M01005	Heathrow	PAK3
M01006	Glocester	PAK3
M01007	Schipol	PAK3
M01008	Venice	PAK3
M01009	Laguardia	PAK1
M01010	Charles DeGaulle	PAK3
M01011	KDFW	Base
M01012	Sydney	PAK2
M01013	Christchurch NZ	PAK2
M01014	Dublin Airport	PAK3
M01015	Atlanta International	PAK1
M01016	Auckland Airport	PAK2
M01017	Melbourne, Australia	PAK2
M01018	San Francisco	PAK1
M01019	Seattle	Base

Airport Closeup Maps

M00001	Heathrow	Base
M00002	Colorado Springs	Base
M00003	Denver, Colorado	Base
M00004	Laguardia	Base
M00005	Dallas-Fort Worth	Base
M00006	SeaTac	Base
M00007	Berlin	Base
M00008	Madrid, Spain	Base
M00009	Houston, TX	Airports *
M00010	Charles DeGaulle	Base
M00011	Sydney Airport	Base
M00012	Toronto Airport	Airports *
M00013	Brisbane Airport	Airports *
M00014	Marco Polo (Venice)	Airports *
M00015	Innsbruck	Airports *

* Downloaded as AirportMaps.zip. The zip file contains all of the maps above.