General Aviation Panel

INTRODUCTION

WHAT IS G.A. PANEL?

G.A. Panel is an application with the most essential instruments of the cabins of general aviation, for the learning in schools or the use in simulators, and which is updated by values sent by Microsoft Flight Simulator (from now FS) through Pete Dowson's dll FSUIPC: http://www.schiratti.com/dowson.html

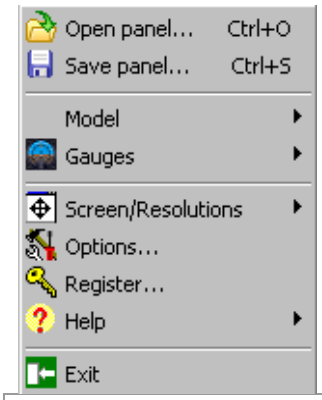
This application has been developed because up to the moment there are many applications that simulate commercial aviation, but very few of general aviation that can be personalized and connected to FS. The possibility of modifying and resizing the position of the instruments has been added, as well as its rapid concealment / visualization for better training. The window can be adapted to any resolution and the edges of window can be hidden, stay on top, etc.

All the gauges are controlled by keyboard, with keys independent and not sensitive to capital letters so that external controls (hardware) can be made with a simple keyboard controller, or accepting keys sent through other applications.

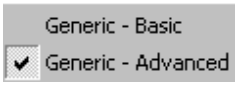
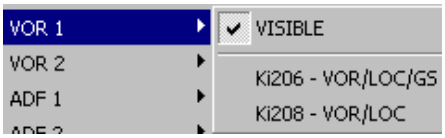
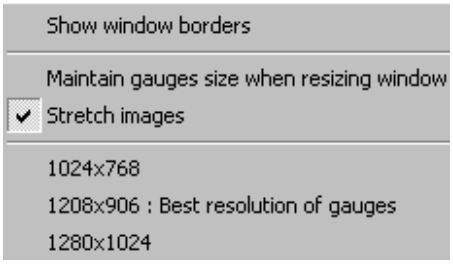
The program does not use graphical specific acceleration, so it should work in any computer with a newly installed operative system.

On getting started it tries to connect automatically with FS though FSUIPC (if it's installed in the same computer) or with WideClient in case of being in remotely. If the connection gets lost, it automatically retries the connection in intervals of half second.

MENU



The menu is activated with the mouse secondary button

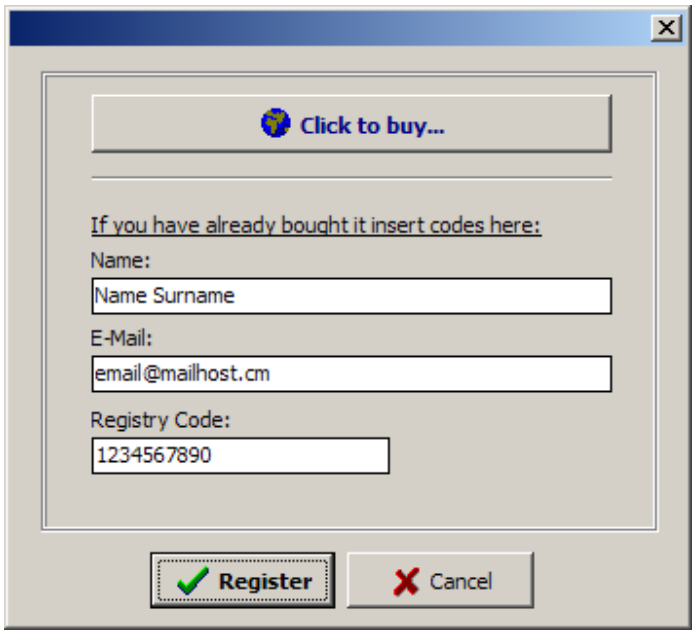
Open panel... Ctrl+O	It loads the panel from a file. If the loaded file is not valid (it does not contain correct information or some information is missing) the instruments will appear in waterfall and disordered.
Save panel... Ctrl+S	It saves the actual panel on a file. It also saves the window position and size.
Model 	It allows to quickly alternating between two predefined panels. ➢ **Generic – Basic:** it represents a basic single engine, for mainly visual exercises or not precision IFR. ➢ **Generic – Advanced:** it represents and advanced single engine, with variable pitch propeller and more advanced IFR instrumentation (i.e. HSI) **Note:** *Gauges and positions are internally predefined in the program, if permanent changes are required once modifications have been done, save the panel on a file.*
Gauges 	A list of available gauges can be unfolded to be shown or hidden, and it even allows to change the model of those that have the option. (As the VOR, or the directional gyro). **Note:** As some gauges have the same position as others, it's possible that these remain hidden below another when trying to be shown. Please find below the list with the order drawn.
Screen / Resolutions 	It allows to select the gauges behavior when resizing the window, as well as quickly change the size of this one. ➢ **Show window borders:** If selected, window borders appear, as well as minimizing, maximizing and closing buttons (as any standard window). If deselected, borders and buttons disappear. ➢ **Maintain gauges size when resizing window:** If selected, gauges will not move nor resize when adjusting the size of the window, although these gauges have been previously resized and the stretch images option is selected. ➢ **Stretch images:** If selected, gauges get resized (they stretch or shrink) depending on the size of the window. If deselected, gauges are shown to its maximum resolution.
	➢ **1024x768:** It adjusts the window to a XGA resolution. ➢ **1208x906:** It adjusts the window to a bit lower SXGA's resolution, which is when gauges are shown without stretching and to its maximum quality. When used in simulators, this option is useful to leave a small margin at the sides if the screen hides after a panel of wood, etc. ➢ **1280x1024:** It adjusts the window to a SXGA resolution.

Options...	It shows the options windows. Please see below for more detail.
Register...	It shows the registration windows. Please see below for more detail.
Help	**Quick help:** It shows a window with help on keys and short accesses. The help file can be edited to add or modify texts. It is a "Rich Text File (RTF)" and can be changed, for example, with WordPad (included with Windows). **About:** It shows the credit page.
Exit	It closes the program. It closes without asking, even when changes have been done. If changes are wished to be saved, manually save the panel (Save panel option) or activate the automatic save option.

REGISTRATION

DEMO MODE / REGISTERED MODE:

This is a Shareware program, which means that it is necessary to register for its continued and non restricted use. If not registration is made, the program totally works but is disconnected of the FS after 20 minutes of the first connection.



The “Click to buy...” button opens a web explorer with the web page of the product and the possibility to buy.

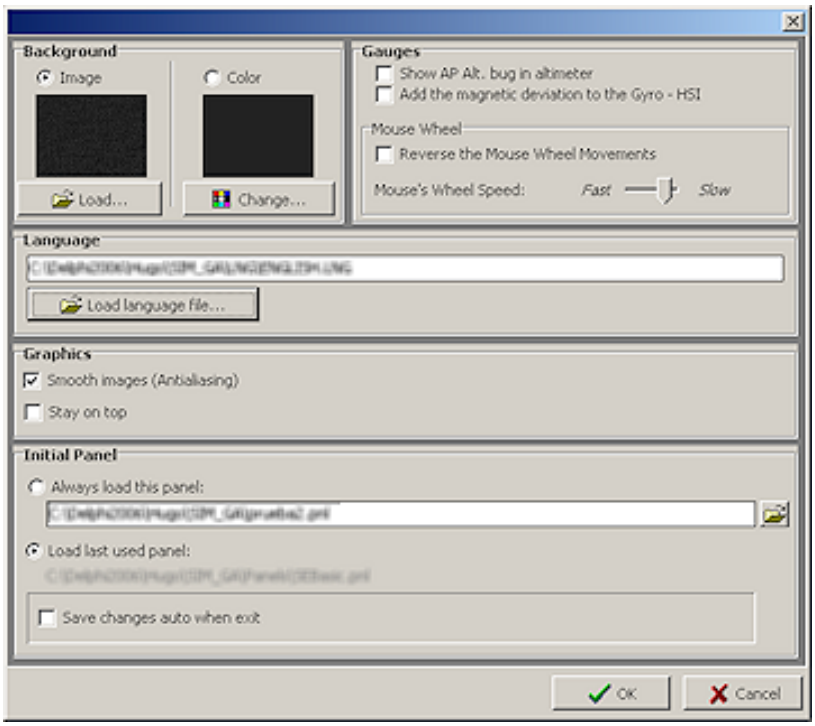
When purchasing a Registry Code will be generated with your Name and E-mail.

Once written your Name, E-Mail and Registry Code *(as shown in the example picture)*, click on the “Register” button. No message will appear, but if the code is correct the program will get connected again to FS and the registration menu will not appear anymore in the next loads.

If you click on the “Cancel” button without introducing any registration code, you can still work on a demo mode, although after 20 minutes it will get disconnected of the FS and the registration window will appear again.

Note: This screen may be slightly different with more buttons to perform the purchase.

OPTIONS



Background: Let's try between shows a background picture or a plain color. It shows a preview picture and color.

- To load a different picture press the button **Load…**
- To change the color press the button **Change…**

Language: Show the language file that is loaded.

- To change the language press the button **Load language file…** and selects a language file (*.LNG)
Note: Due to possibility of file modification by user, if file contains erroneous data or lack of data the program will show the erroneous labels in the default internal language (Spanish).

Graphics:

- **Gauges smooth (Antialiasing):** if checked it smooth the images, lowering pixilation, useful with small texts, but it reduces the performances.

- **Stay on top:** if checked maintain the window always on top.

Initial Panel: Let's try what panel will be loaded at the next start and if it has to be saved automatically when exit.

- **Always load this panel:** If selected it will load always the same panel, specified in the edit text box. Press de folder button to open a dialog to find the file.

- **Load last panel used:** If selected it will load the last panel used, if the file does not exists it will generate the default panel. (DEFAULT.PNL)

- **Save changes auto when exit:** If checked the changes in panel will be automatically saved when exit.

Gauges:

- **Show AP Alt Bug in Altimeter:** If checked shows a bug mark in the altimeter wich indicates the altitude set in autopilot in thousands.

- **Add the magnetic deviation to the Gyro - HSI**: Adds the magnetic deviation to the true heading.

- **Mouse Wheel**
    - **Reverse the Mouse Wheel Movements:** Reverse the normal sense of rotation of the gauge's knobs.
    - **Mouse's Wheel Speed:** Allow in 7 selectable speeds a fine or coarse movement of the knobs.

KEYBOARD

SELECTION OF GAUGES TO MOVE/RESIZE

The following combination of keys allows to move or to resize the instruments, and also the window size. First it must be specified to the application what gauge wants to move, this is gotten with the following combination of keys:

Gauge selection:

KEYS	SELECCTION
Ctrl + F1	Air Speed Indicator
Ctrl + F2	Artificial Horizon
Ctrl + F3	Altimeter
Ctrl + F4	VOR1
Ctrl + F5	Turn Coordinator
Ctrl + F6	Directional gyro / HSI
Ctrl + F7	Vertical Speed Indicator
Ctrl + F8	VOR2
Ctrl + F9	Suction.
Ctrl + F10	Amperes meter.
Ctrl + F11	Fuel.
Ctrl + F12	Manifold / Fuel pressure.
Shift + F1	EGT / CHT.
Shift + F2	Oil Temp. / Press.
Shift + F3	RPM.
Shift + F4	Low voltage light
Shift + F5	ADF 1
Shift + F6	ADF 2
Shift + F7	RMI
Shift + F8	Landing Gear Annunciator
Shift + F9	DME
Shift + F10	Radio Altimeter
Shift + F11	G Meter
Shift + F12	Flap - Trim
Ctrl + 0	*All gauges together*
Ctrl + 1	*Window (no gauges)*
ESC	*Deselect option selected*

- Once the gauge is selected the following keys can already be used, as many times as be necessary, when finishing it recommends pressing ESC.

- By default the movement / resize is pixel by pixel.
- By default arrows move, to **Resize** maintain **SHIFT** (⇧) key pressed.

KEYS	ACTIÓN
Ctrl +	Move / Resize in steps 10 by 10 pixels.
Shift (⇧) **+**	Mode Resize (Resize instead of move)
Right arrow (➔)	Move / Enlarge to the right.
Left arrow (🡐)	Move / Reduce to the left.
Up arrow (🡑)	Move / Reduce to up.
Down arrow (🡓)	Move / Enlarge to down.

- To **move the instruments with the mouse:**
  maintain CTRL key pressed then click and drag them.

SHOW/HIDE GAUGES

Through the menu you can show/hide all gauges, but with keyboard some only.

Quick keys to show / hide gauges

KEY	SHOW / HIDE
1	Air Speed Indicator
2	Artificial Horizon
3	Altimeter
4	VOR1
5	Turn Coordinator
6	Directional gyro or HSI
7	Vertical Speed Indicator
8	VOR2
9	DME
(	ADF1
)	ADF2

MODIFICATION OF GAUGE'S PARAMETERS WITH KEYBOARD

The program is case insensitive.

KEY	ACTION
Ctrl +	Steps in 10 by 10, instead of 1 by 1.
Space	Repeat the last key pressed, includes ctrl and/or shift if was pressed.
A	Decrease TAS correction in Air Speed Indicator.
Z	Increase TAS correction in Air Speed Indicator.
S	Goes up the guide of artificial horizon.
X	Goes down the guide of artificial horizon.
E	Change altimeter barometric metering between hectoPascals (milibars) or InHg.
D	Increase the Kollsman's value (1 hPa ó 0,01 InHg).
C	Decrease the Kollsman's value (-1 hPa ó -0,01 InHg).
R	Decrease Radio Altimeter Decision Height (steps 5 by 5 ft, or 50 by 50 ft if Ctrl key is pressed)
T	Increase Radio Altimeter Decision Height (steps 5 by 5 ft, or 50 by 50 ft if Ctrl key is pressed)
F	Increase OBS (Course) / HDG of NAV1. (VOR o HSI)
V	Decrease OBS (Course) / HDG of NAV1. (VOR o HSI)
G	Corrects gyro drift increasing 1 degree its indication.
B	Corrects gyro drift decreasing 1 degree its indication.
H	Increase the heading bug in the directional gyro and HSI
N	Decrease the heading bug in the directional gyro and HSI
J	Increase OBS (Course) / HDG of NAV2. (VOR o HSI)
M	Decrease OBS (Course) / HDG of NAV2. (VOR o HSI)
O	Selects Nav1 as source for DME.
P	Selects Nav2 as source for DME.
K	Increase HDG of ADF1
L	Decrease HDG of ADF1
U	Change the source of needle 1 in RMI (VOR1 <-> ADF1)
I	Change the source of needle 2 in RMI (VOR2 <-> ADF2)

MODIFICATION OF GAUGE'S PARAMETERS WITH MOUSE

The instruments that have Knob(s) (Heading, Course, etc.) can be quickly adjusted with mouse, maintaining pressed the primary mouse button and drag it up or down. The click can be do it anywhere in the gauge, except in that instruments wich have two knobs (like HSI or RMI) where the area are virtually divided in two sections.

Virtual division of HSI,
Left side adjust the course and right side adjust heading bug.

In RMI is enought to do a click to change the sources (VOR or ADF).

Since version 1.5 is possible to use the mouse's wheel to rotate the knobs, only needs to situate the pointer over the instrument and rotate the wheel, the program detects the gauge wich is under it.

PROGRAM OPTIONS

Quick modification of program's options.

TECLA	OPCIÓN
+	Enable / Disable window borders.
-	Enable / Disable stretch.
¡	Show / Hide frames per second.
'	Enable / Disable picture smooth (**Antialiasing**).
/	Enable / Disable stay on top.
,	Show / Hide background picture.
.	Enable / Disable the Demo mode. (random data)
*****	Enable / Disable the night illumination simulation (only if not connected to FS.)
CTRL + O	Open Panel: Show the dialog to load a panel from file.
CTRL + S	Save Panel: Show the dialog to save the panel in a file.
F1	Show quick help. (ESC to close).
Alt + F4	Exit

LAYER CREATION ORDER

The gauges are created in layers, the first layer stay on bottom, and then until the last that remains on top.

Layer	*Gauge*	*Layer*	*Gauge*	*Layer*	*Gauge*
1	Air Speed Ind.	11	Fuel	21	DME
2	Artificial Horizon	12	Manifold / Fuel Pr.	22	Radio Altimeter
3	Altimeter	13	EGT / CHT	23	G Meter
4	VOR 1	14	Oil	24	Flap - Trim
5	Turn Coordinator	15	RPM	25	Compass
6	Direc. gyro / HSI	16	Low voltage light	26	Torque
7	Vertical Speed	17	ADF 1		
8	VOR 2	18	ADF 2		
9	Suction	19	RMI		
10	Amperes meter	20	Landing Gear Ann.		

TESTS

This program has been tested with:

Op.System: Windows 2000, Windows XP, Windows Vista, Windows 7.
Simulators: Flight Simulator 2004 and Flight Simulator X
FS Modules: FSUIPC 3.47 and FSUIPC 4.3, WideFS 6.47

CONTRIBUTION & SUGGESTIONS

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