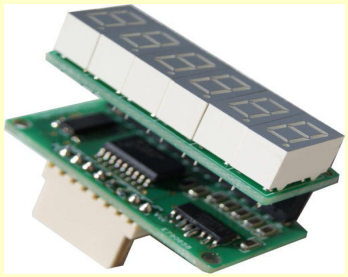
How to: Use the 7-segment MicroDrivers from Flightsimparts.eu with Arduino and AirManager for FSX, P3D or XPlane



This document is written by Wendy from FlightSimparts.eu
on december 15, 2019. MicroDrivers are sold by www.flightsimparts.eu
The currect sketch is written to use 6 MicroDrivers but you can connect up to 10 pieces of 7-segment MicroDriver displays to 1 Arduino Mega.
Using both the Arduino sketch and our AirManager LUA script you can show NAV, NAV standy, COM, COM standy and ADF frequencies on the live displays. Other connections are also possible, Autopilot, MCP, Transponder....
http://www.flightsimparts.eu/sim_arduino_microdriver.htm
Via the link above you will find all necessary downloads to use the MicroDrivers

This document describes how to get the 7-segment MicroDrivers working with Arduino and how to connect to the flight simulator. A separate document and sketch is available for connecting hardware to be used with for example NAV, COM and ADF.

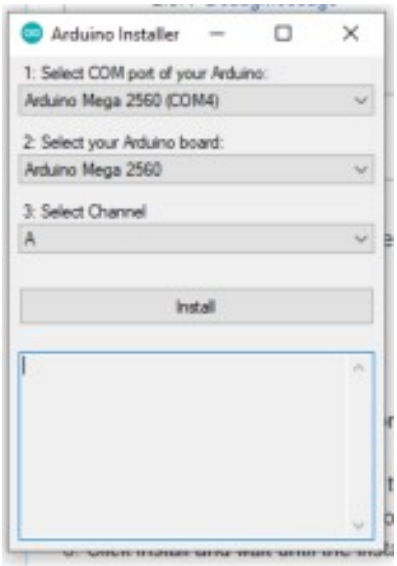
Requirements

- Arduino Mega2560
- Arduino IDE with the MessagePort Library (free download)
- AirManager to connect to FSX, Xplane and P3D all versions
- 1 or more MicroDrivers to test
- Sketch for Arduino “Arduino_7-Segment_Radios_0.0.5.ino” (free download)
- AirManager LUA script “GenericMicroDriversCOM_NAV_ADF.siff” (free download)

1, Patch the Arduino to be able to work with AirManager

Go to the Siminnovations/wiki page https://siminnovations.com/wiki/index.php?title=Arduino
Don't worry about the complex things on this page, we have already solved the difficult stuff for you. Your only need to download a few things from this page.
!! When executing the download you could receive a message from windows telling that it is not safe to execute, you can however be sure that it is safe.

Look for...
Installer and below this text you will see "Download the latest Arduino installer for Windows here”



After downloading execute it. Windows can prevent executing it but continue and the next screen will appear

1. Connect your Arduino Mega to yur computer using a USB cable and run the installer. The installer should automatically detect your connected Ardino's.
2. Verify if the comport is correctly detected. Adjust if not. It needs to show your Arduino and Com port
3. Verify the correct Arduino board type
4. If this is the first Arduino of this type to patch with the Arduino installer choose Channel A.
   Each Arduino of the same type needs a Channel.
   So your second Arduino Mega should become B.
5. If everything is correct click “Install” and wait for the installer to finish.

You need another download further down the page

so look for...
Download the Message Port library
Download here:

2, Open and compile the Arduino sketch
Connect Arduino to your computer and open the Arduino editor.
Download the "*SiMessagePort.zip*" library and install this into the Arduino Libraries.

To install the "*SiMessagePort.zip*" library go to "Sketch" in the Arduino editor menu and choose "Include library...". Click on "Add .ZIP library...". Arduino will now install the library.

Next open the sketch "Arduino_7-segment_Radios_0.0.5.ino" and try to compile the sketch. If you have not downloaded the sketch please download from
http://www.flightsimparts.eu/index_htm_files/Arduino_7-Segment_Radios_0.0.5.zip

There is another document that explains everything in the sketch and explains how to connect the MicroDrivers.
http://www.flightsimparts.eu/index_htm_files/ManualSerialSketchMicroDrivers.pdf

When the sketch compiles and you have MicroDrivers connected to your Arduino then you should see the default text that is included in the sketch.

!! If nothing happens, try to solve this first.
!! To be able to communicate with AirManager the sketch needs to compile. If not please do not continue until the sketch compile. Without this you cannot connect the Arduino to the flight simulator.

3, Install AirManager
Airmanager is the application which can connect to FSX, P3D, Xplane.
You specify which data AirManager needs to monitor in the flight simulator. These data can be used to connect hardware via a LUA script language.

Such a complex and fantastic software program is not free to use. You need to buy it but it not expensive. The price on the date of writing this document is 65,00 euro + VAT. You need AirManager v3 desktop. There is a very active forum and lot's of video's are available on the internet.
Download can be done via https://www.siminnovations.com/buy/product/36-air-manager-v3
You can find a lot of instruction video's here
https://www.youtube.com/channel/UCCLeY2Ta9JrO0EBCJH04-OA/videos

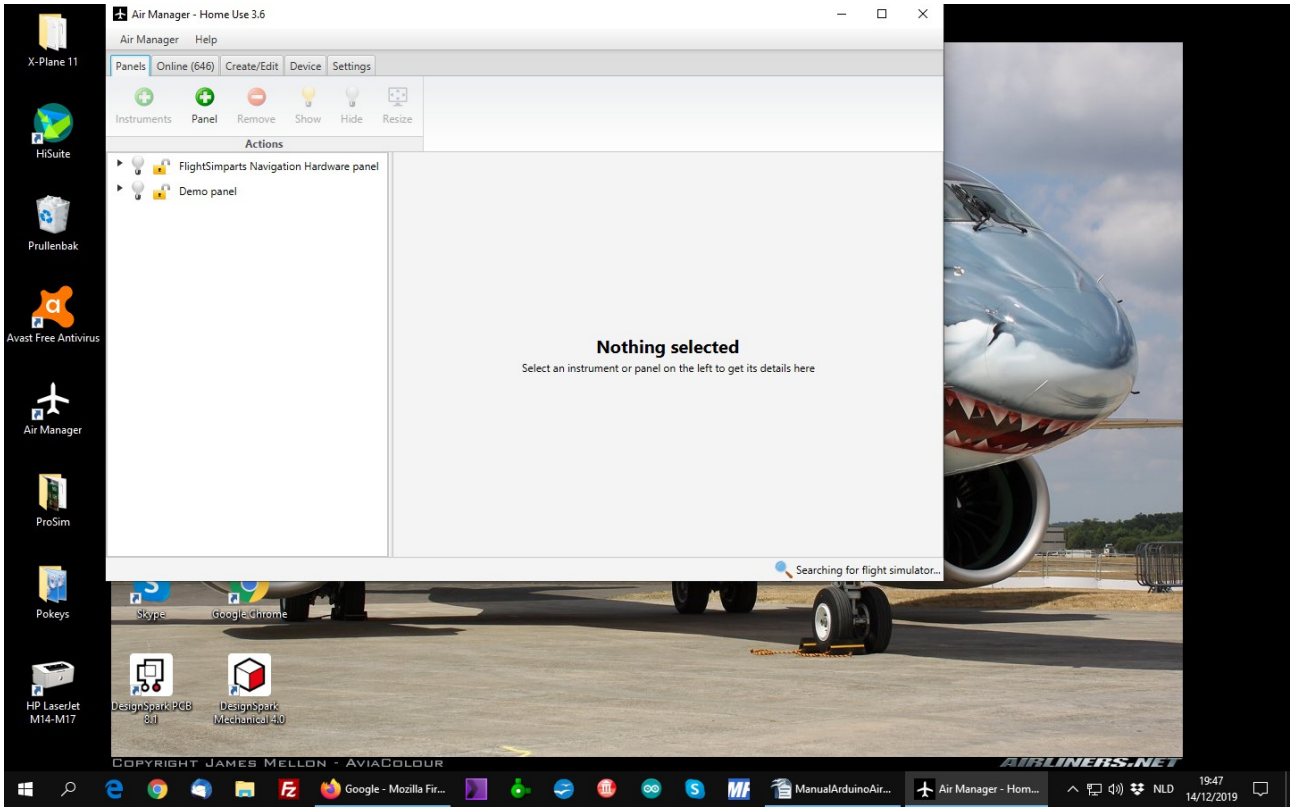
During the installation Air Manager detects your different copies of flight simulators and install's a plugin in each of them. This way we will be able to communicate with the simulator.
After installation you need to activate your copy. This can be done from the menu "Air Manager", choose "Activate Air Manager". Once installed and activated you can import the LUA script from our

website which is a free download **LINK**

4, Air Manager explanation

The main screen has 5 tab pages.
Panels: here you can combine and start the different instruments or panels you have
Online: here you can download different instruments or panels, free or payware
Create/Edit: here you can view, edit scripts and make new ones.
Our script will be available here after importing.
Device: here you will see you connected Arduino's. When starting AirManager it takes a while before your Arduino will be visible under this tab. Be patient until he shows up.
Settings: general program settings can be set here.

Below is the opening screen of Air Manager.



5, Import the LUA script in AirManager

To import the script open AirManager and go to the menu “Air Manager” and choose “Import…” and select the .sff file you downloaded earlier.
The file is available for download here **LINK**

After importing this .sff file go to the “Create/Edit” tab and you will see the LUA script which communicates with the simulator. Now it is time to start the simulator FSX or P3D or Xplane and select a light Cessna 172 or Beachcraft Baron or something like that. Be sure that the simulator is not paused.

!! check now if your Arduino is available under “Devices”.

It will read something like “Arduino Mega2650 – channel A”

If all this is ok you can start the script by selecting the script in the left panel and push the “RUN”-button on top. When the script runs you will see a panel appear with the NAV, COM and ADF frequencies listed. Turn the NAV or COM via the simulator to another frequency and you should see the data in Air Manager change. This data is also send to the Arduino.

If you have Arduino connected and MicroDrivers connected you should also see the data change on 1 or more displays.

Thanks for reading and enjoy
Wendy FlightSimparts.eu
http://www.flightsimparts.eu/sim_arduino_microdriver.htm