

The Ultimate plug and play Stellex Mini-YIG Synthesizer controller.

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The stellex synthesizers are quite popular in certain Ham circles. They can easily provide a local oscillator for 5.7GHz (Ham Band) for 8.5GHz (DSN RX) and for 10GHz (Ham Band) depending on the actual frequency range of the YIG you have.

Specs and performance are available on John's (KE5FX) web site: <http://www.ke5fx.com/stellex.htm>

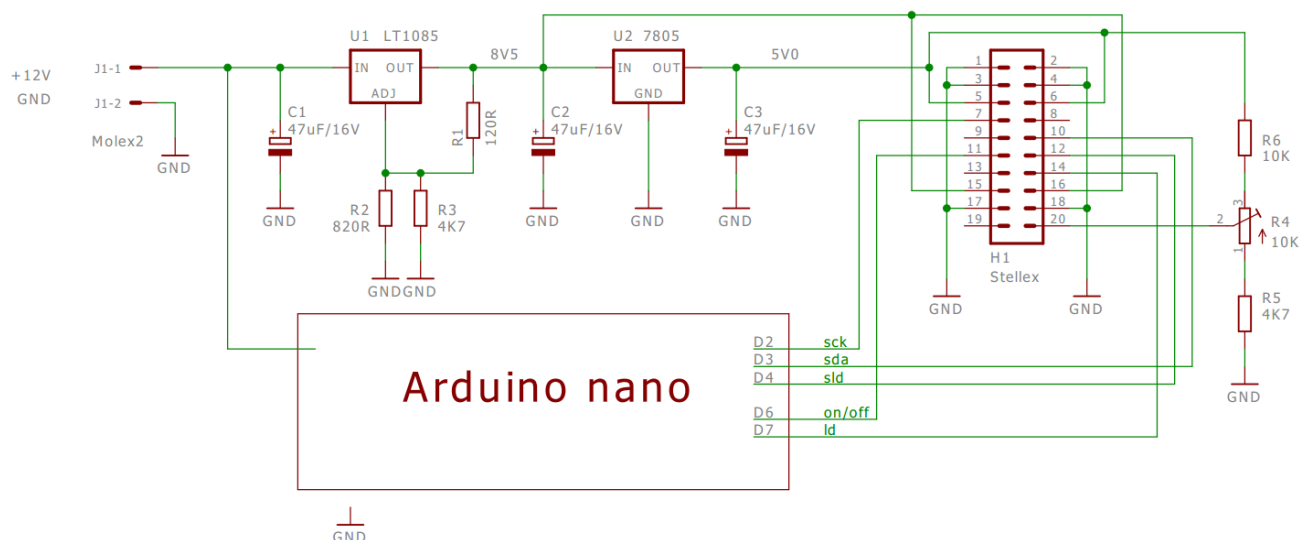
The controller scheme presented here is the ultimate plug and play solution for the RF minded ham that don't want to spend any time on digital and software/microcontroller developments.

- **You need** an Arduino nano 3.0 (or compatible/clone) – Costs peanuts. (pardon. Less than peanuts as they are more expensive than Arduino nowadays).
- **You need** a couple of voltage regulators and minor stuff (see diagram below)
- **You need** to connect a few wires (not many).
- **And you need** to run the "stellex_k.exe" that is a PC software(windows) I provide.

Nothing else and you are in business.

(Note that you don't need to have any of the Arduino tools installed, neither you need to know anything about Arduinos or programming – This is truly plug and play for the RF & MW amateur).

The schematic goes like this:



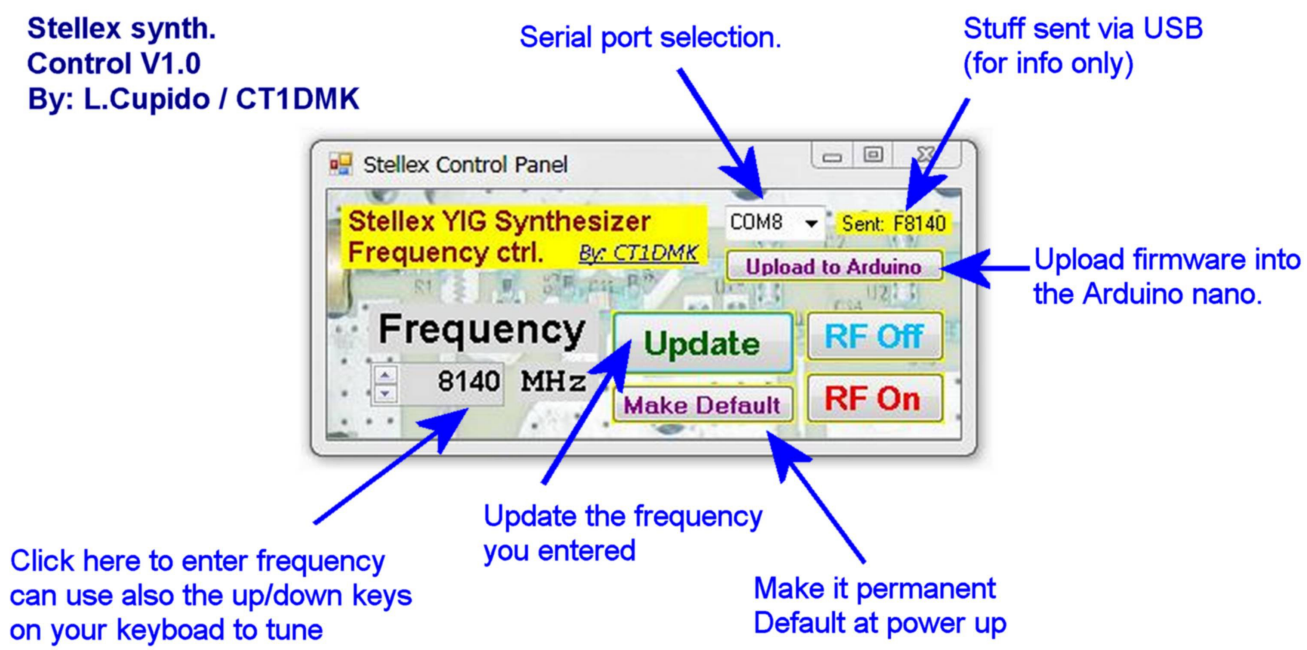
If you don't like the performance of the internal VCXO reference you may modify and route in a good 10MHz reference signal as described by others. Pin 19 of the connector seems a good place for a reference input as it goes right to the place where the reference is required.

The LED on your arduino-nano will stay on whenever the PLL is in lock and will start blinking if the PLL becomes unlocked. (usefull also to find the range of your YIG without any further instruments).

The synthesizer starts after power up in the permanent/default frequency programmed and with RF turned on. So you may program it over USB and then just use it stand alone as it starts up in the frequency you have configured.

Included in the "stellex_ctrl.zip" are all the files you need to get it done. Just unzip the files into one folder and double click "stellex_k.exe" to run it.

And the Control software goes like this:



When uploading firmware to an Arduino you may be asked if you trust "avrdude" I would say you can trust that "dude".

If for some reason you don't find on which COM port your arduino become assigned just look on the computer properties / device manager or control pannel / system / device manager.

If your arduino became assigned to a COM port higher than 9 means that you have been playing with lots of serial stuff on your PC and in this case you surely know how to uninstall those assignments (or google for it as there are plenty of info on the web that tells you how you can free unused COM port numbers).

Have fun.

CT1DMK. Jul 2015 (this is quite an old project (circa 2009) that only come public in 2015 !)