RF Signal Generator– 0.039-22GHz
Ultra Low Phase Noise USB Control

Summary

The RSGLP0120GA is an easy to use high frequency signal generator controlled through a standard USB port. Using advanced VCO and DDS based technology along with a temperature compensated crystal reference, it offers ultra-low phase noise (-135dBc/Hz at 1MHz offset 1GHz output) and high frequency resolution. The unit can also be locked to an external 10MHz reference source.

General Specification

Output Frequency Range: 0.039 ~ 22GHz
Output Power Range: -20dBm to +10dBm
Frequency Stability: +/-0.5ppm with internal reference
Frequency Step Tuning Speed: <100us
Tuning Step: 0.001Hz
Phase Noise @10KHz offset -116dBc/Hz (@10GHz Output Frequency)
Control Interface: USB

Electrical Specifications			
Frequency	**39MHz-22GHz**	**Typical Output Power**	**10dBm**
Frequency Stability	**+/-0.5ppm**	**Output Power Tuning Range**	**31.5dB with 0.5dB step**
Frequency Aging	**+/- 3ppm (10 years)**	**Output Power Linearity**	**+/- 0.5dB**
Reference Tuning Range	**+/-100ppm**	**Output Power Accuracy**	**+/- 1.5dB**
Tuning Step	**0.001Hz**	**SFDR 1MHz Tuning Step**	**65dBc**
Phase Noise @ 10GHz Typical	**-116dBc/Hz (@10KHz) -117dBc/Hz (@100KHz) -118dBc/Hz (@1MHz) -140dBc/Hz (@10MHz)**	**2nd Harmonic**	**-30dBc**
Power Supply Voltage	**110 / 240V AC**	**3rd Harmonic**	**-35dBc**
USB Standard	**USB 2.0**	**EXT Reference Power**	**0dBm to 10dBm**

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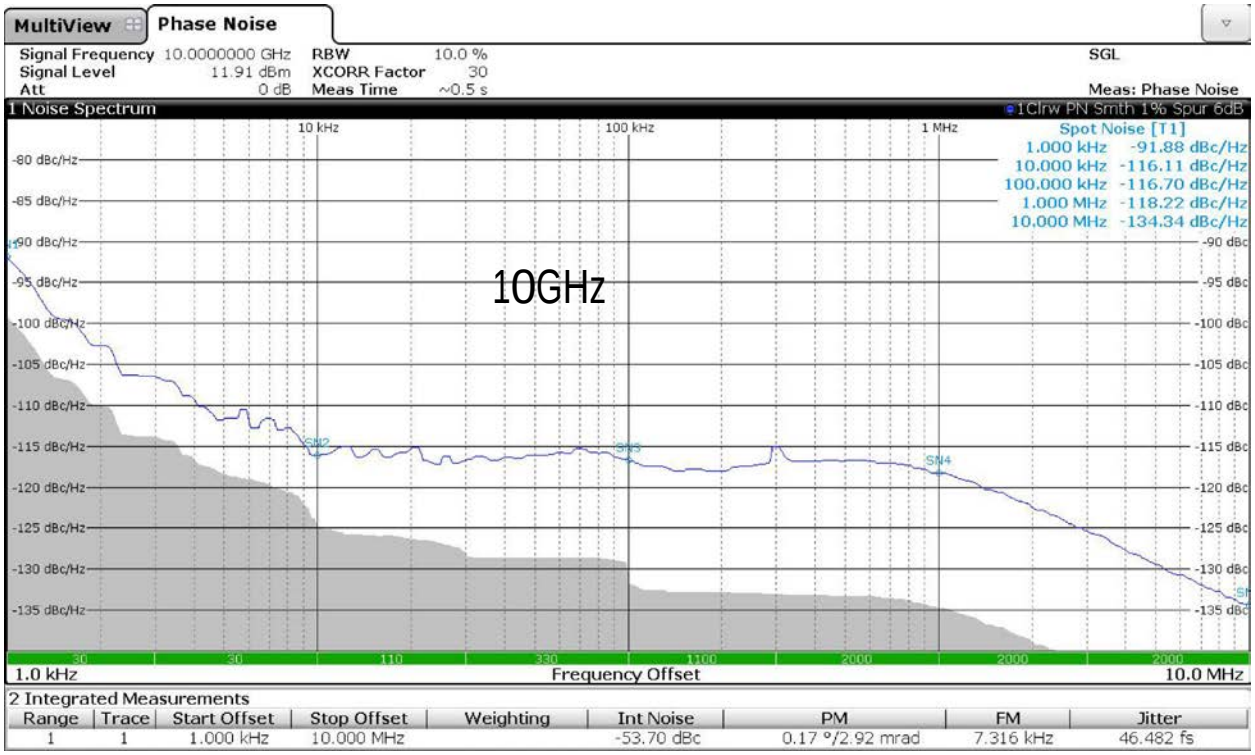

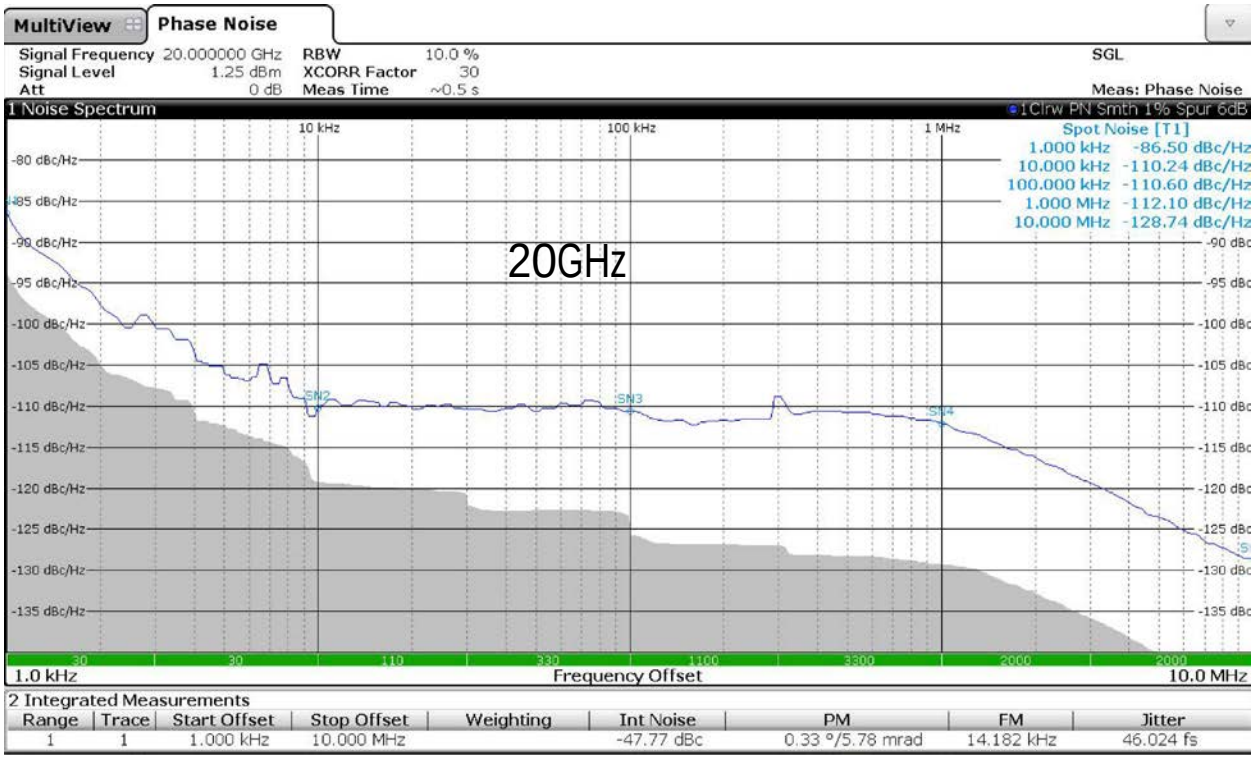

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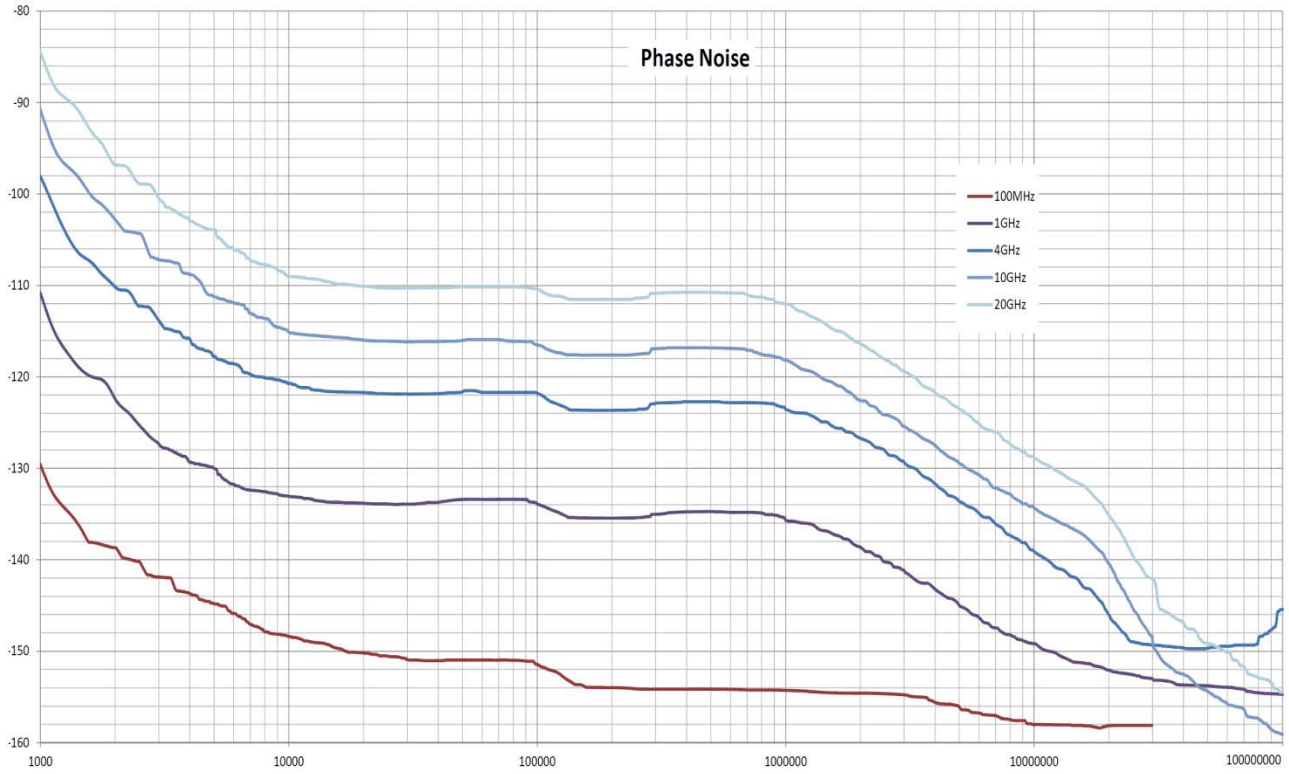

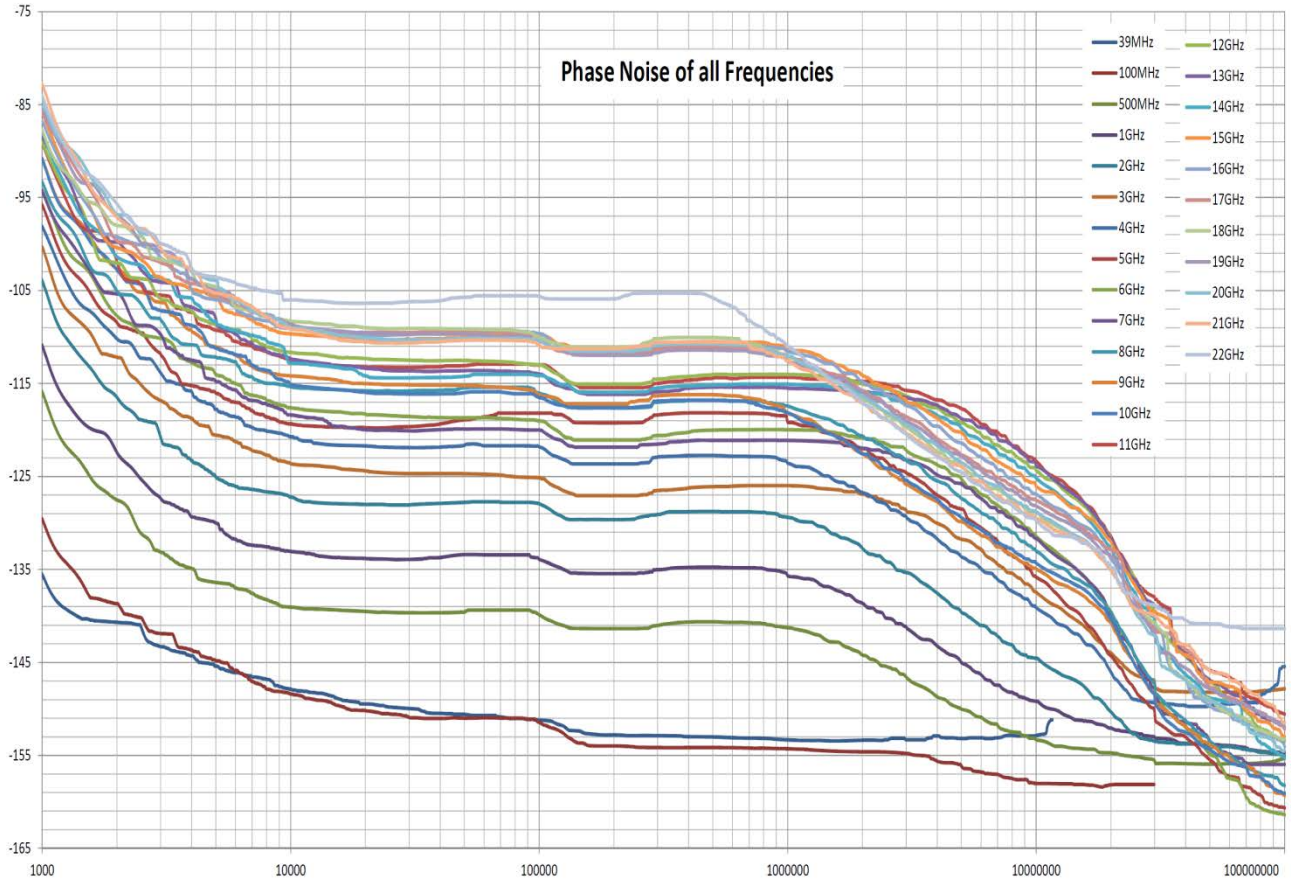

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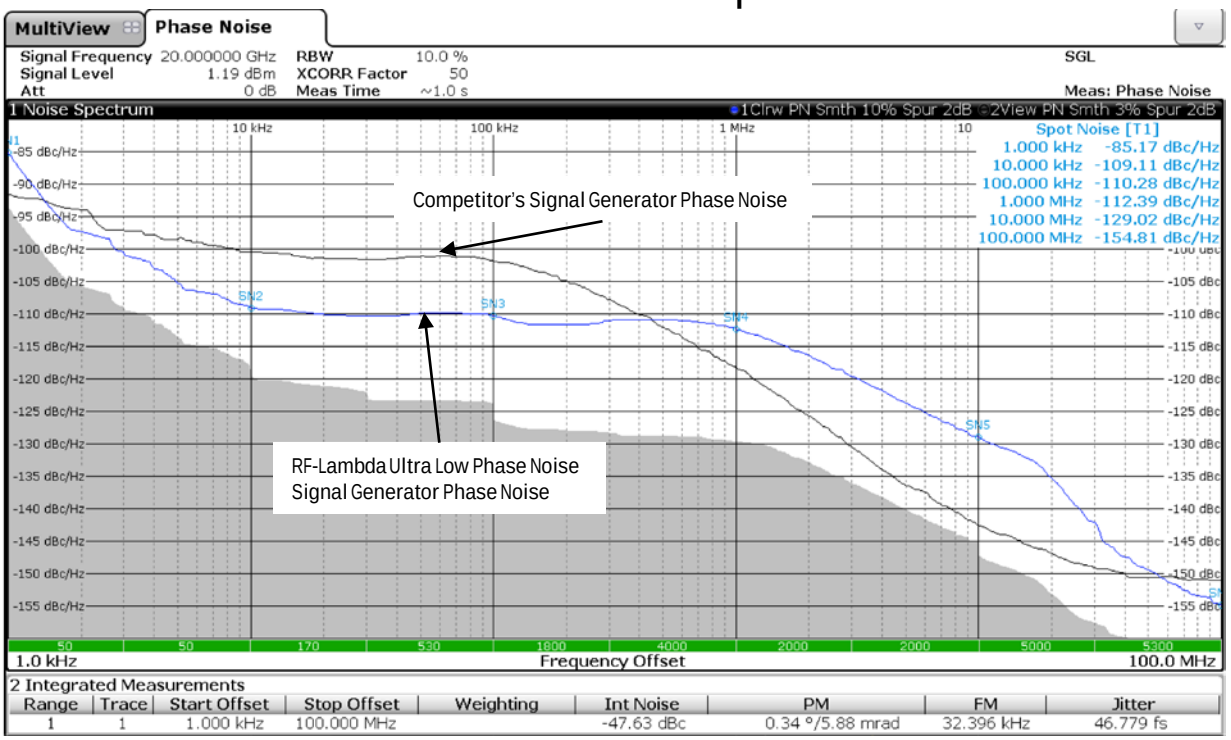
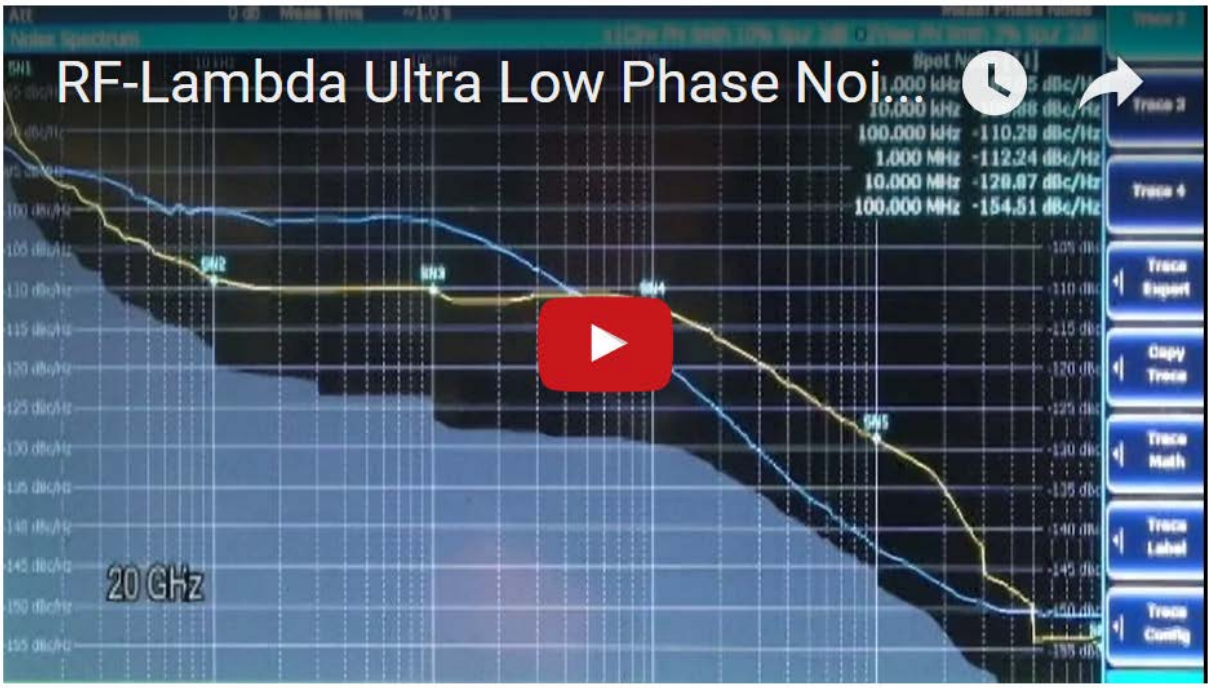
Phase Noise Comparison



Video Instruction Link:

http://www.rflambda.com/product_signalgenerator.jsp



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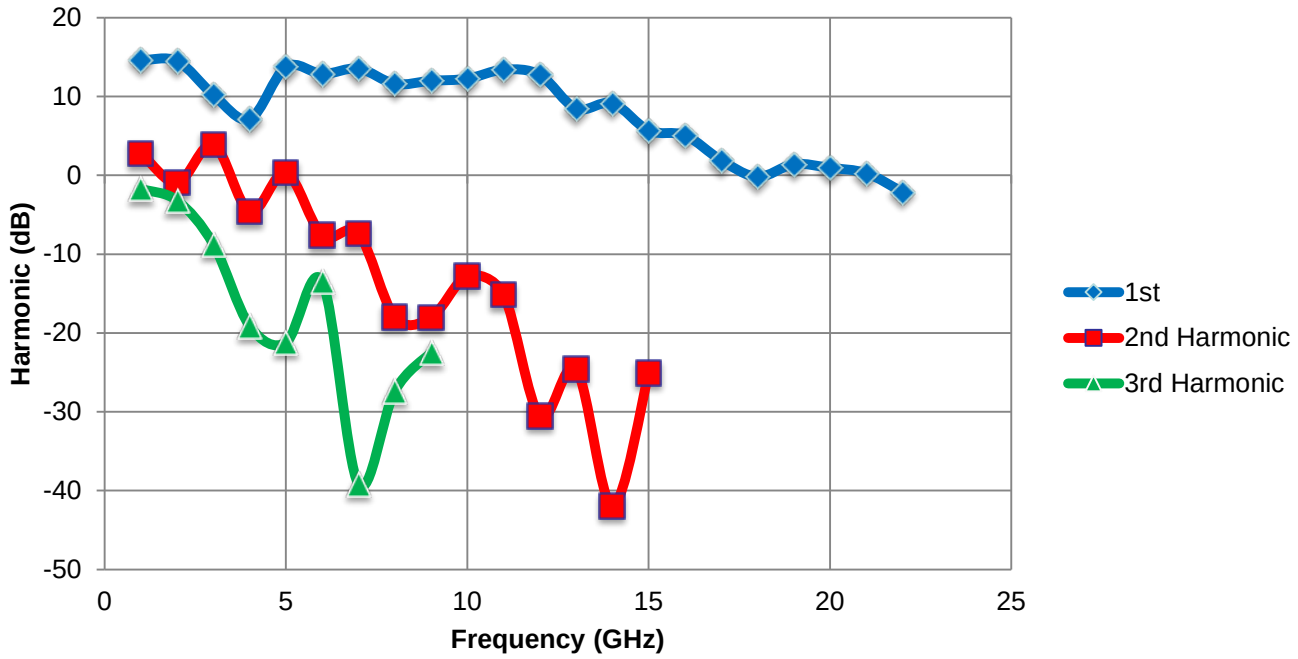
Harmonics Chart



User Instructions:

1. Install the SW below on the control PC

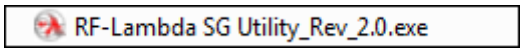
a. Visual C++ Redistributable Packages for Visual Studio 2013
https://www.microsoft.com/en-us/download/details.aspx?id=40784

b. Visual Studio 2010 Tools for Office Runtime
https://www.microsoft.com/en-us/download/details.aspx?id=48217

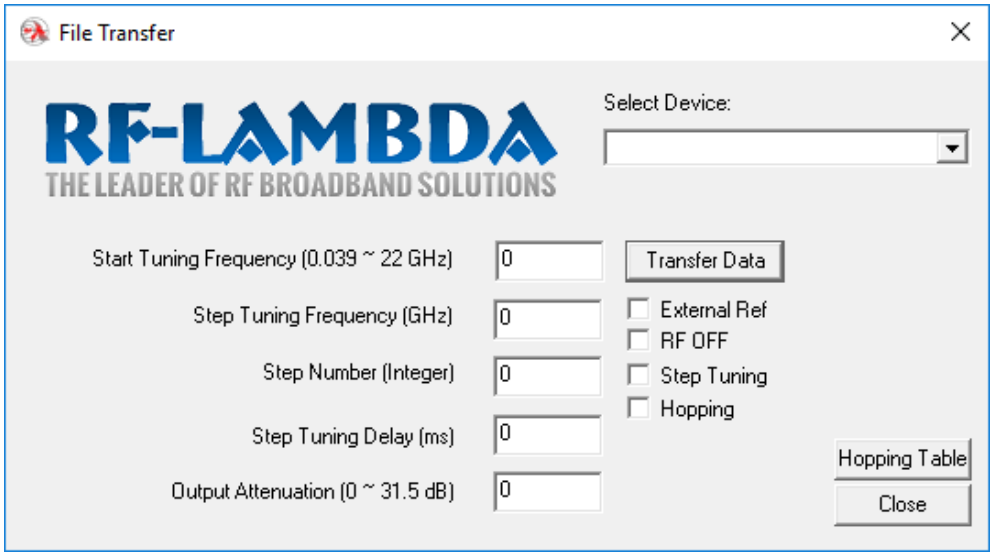
c. Microsoft .NET Framework 4.6.2
https://www.microsoft.com/en-us/download/details.aspx?id=53344

2. Install the USB Driver under this directory:
\RF-Lambda SG Utility_Rev_2.0\Installation Software\USB Driver \
USBXpressInstaller_x64.exe

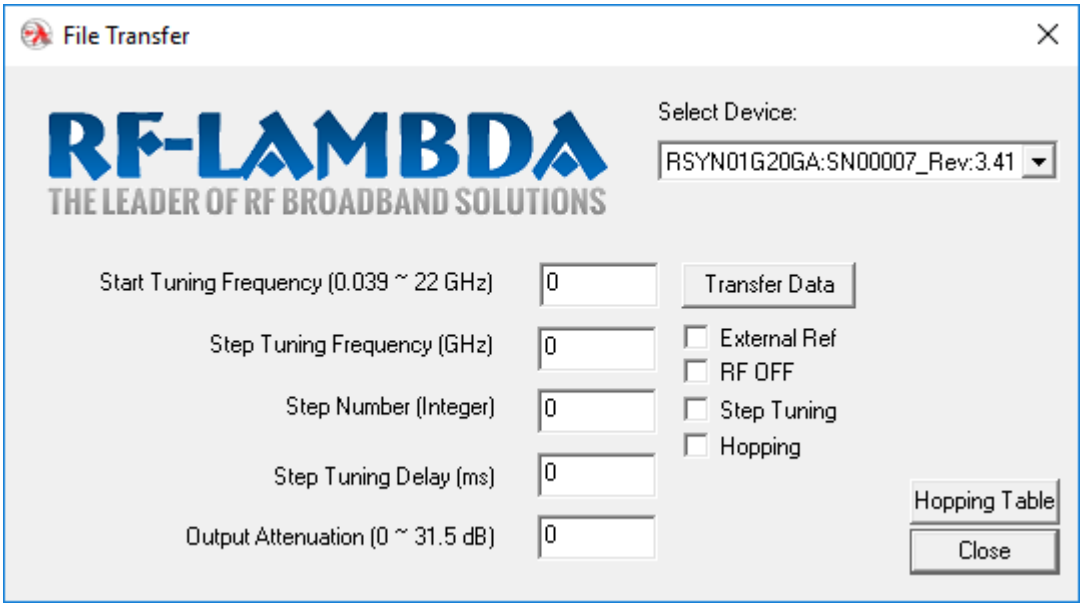
3. Open "RF-Lambda SG Utility_Rev_2.0.exe"
\RF-Lambda SG Utility_Rev_2.0\RF-Lambda SG Utility_Rev_2.0\
RF-Lambda SG Utility_Rev_2.0.exe



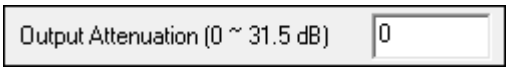
4. The program will look like this:



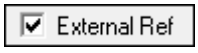
5. Turn on the +15V power supply. The part number, serial number, and revision number will show up in the top right corner.



6. You can reduce the output power by entering an attenuation: (0.5dB to 31.5dB, 0.5dB per step, ex: 0.5dB, 1.0dB, 1.5dB… etc)

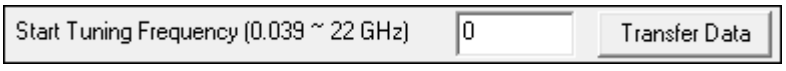


7. You can enable the external ref input by clicking here:



Single Frequency Mode

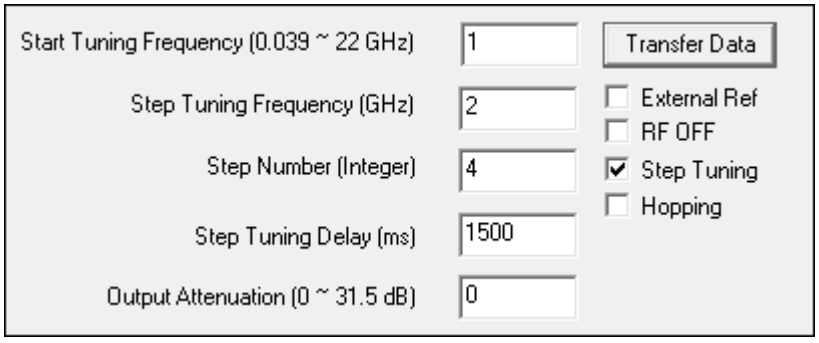
a. Change the frequency (0.039 ~ 22GHz) here and then click Transfer Data:



Step Tuning Mode

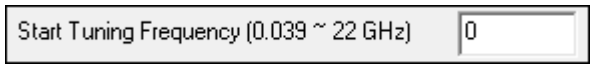
*Tuning Frequency = Start Tuning Frequency + Step Tuning Frequency * Step Number (Integer)*

Example:
If you want 1,3,5,7,9 GHz frequency changing every 5000ms.



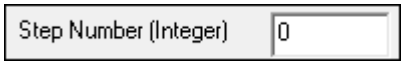
a. Check Step Tuning check box.

b. Put the start frequency in this box (0.039 ~ 22GHz).

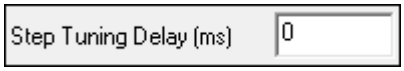


c. Put the frequency step in this box (GHz)

d. Put Step Number (Integer).



e. Put the delay time between each frequency (ms)



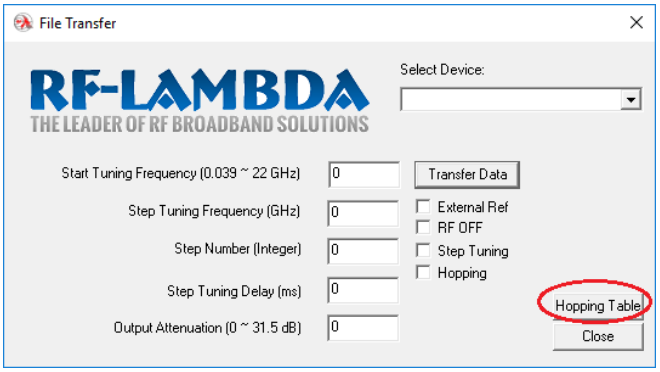
f. Click Transfer data.

Frequency Hopping Mode

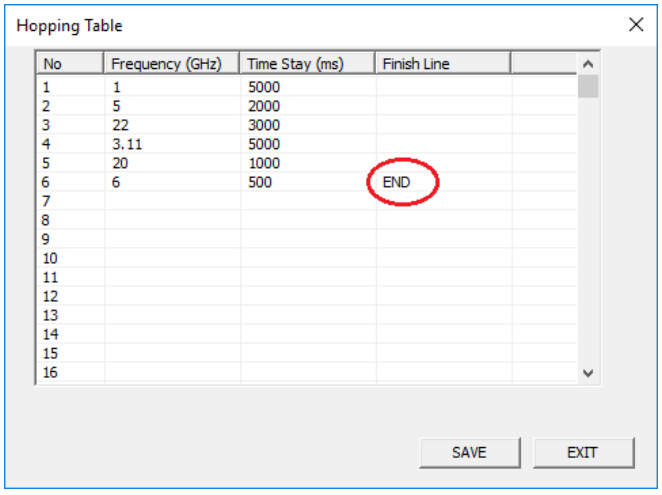
The tuning frequency can follow the tuning table.

a. Select hopping check box.

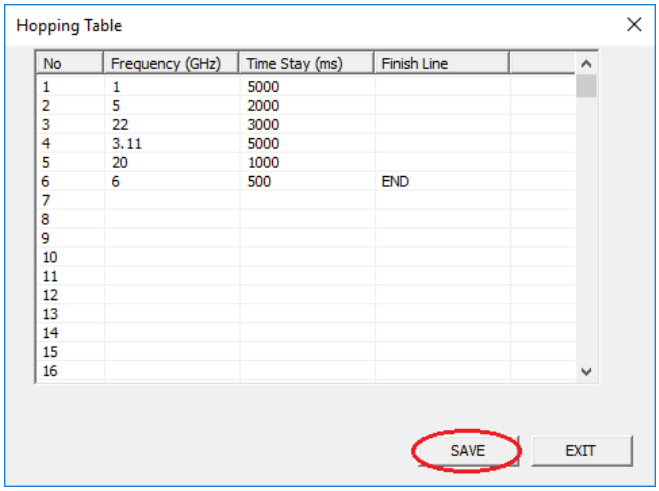
b. Click hopping table button on the bottom right corner.



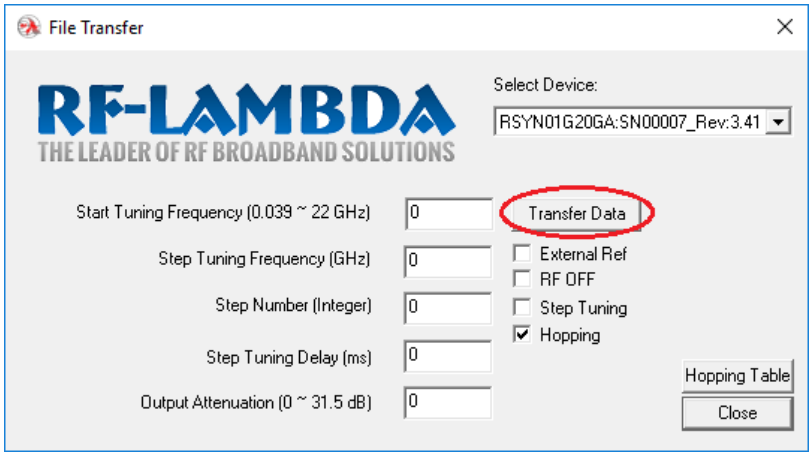
c. Change the variables in the pop out window, make sure to hit "Enter" ever time after change the values, and input "END" in the finish line after the last hopping frequency.



d. Click the "SAVE" button after finished inputting the data, and then click "EXIT".



e. Click "Transfer Data" button start frequency hopping.



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