

Date: 08.17.2012

Solution: The Rigol DSA-1000 and 800 Series of spectrum analyzers have a very nice Pass/Fail mask feature that can be implemented from the front panel or remotely.

We have put together a small application using an Excel 2010 Macro that eases the process of building and saving masks to the DSA.

Requirements:

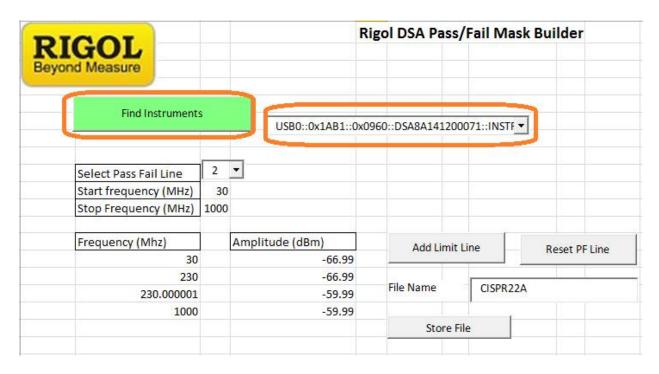
- PC running Windows and Microsoft Excel version 2010 or later
- National Instruments VISA Runtime Engine (www.ni.com Search VISA Runtime and pick the appropriate runtime engine for your Operating System)
- A copy of the file 'PFMaskBUilder DSA.xlsm' which can be downloaded from the software tab here:

http://www.rigolna.com/products/spectrum-analyzers/dsa800/dsa815-tg/

- A Rigol DSA1000, 1000A, or 800 series spectrum analyzer
- A USB cable to connect the PC with the DSA



- 1. Connect DSA to power line
- 2. Connect DSA to controlling PC using USB
- 3. Run the program "PFMaskBuilder DSA.XLSM"
- 4. If you are connected via USB, press the Find Instruments button and select the correct instrument address from the drop down, as shown below:



NOTE: A Rigol DSA connected over USB will have an address like below:

"USB0::0x0400::0x09C4::DSA1A124400151::INSTR"

- 5. Select the Pass/Fail line number. 2 is the Upper Limit and the most commonly used.
- 6. Select a start frequency. This will be the lowest frequency displayed on the DSA

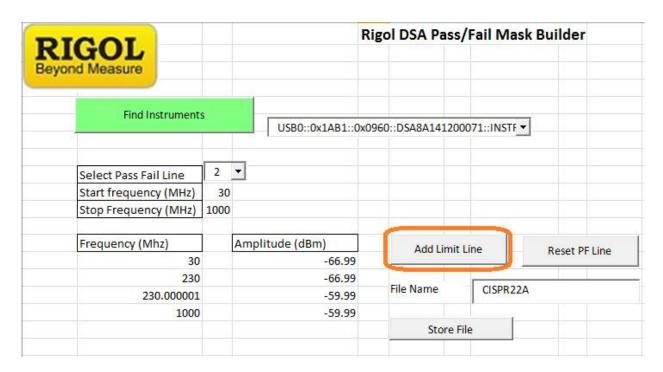


- 7. Selet the stop frequency. This will set the highest frequency displayed on the DSA
- 8. Enter the frequency (MHz) and the Amplitude (dBm) for each point in the limit line profile.

NOTE: You will need to place a small frequency offset for each continuing point. For example, if you want a line to go from 30 MHz to 300MHz at -10dbm, then from 300MHz to 1GHz at -20dBm, the sheet would look like the following:

Frequency (Mhz)	Amplitude (dBm)
30	-10
300	-10
300.000001	-20
1000	-20

9. Press Add Limit Line button to send the new limit to the instrument





10. Press Reset PF Line button to reset limit line to 0dBm

IGOL and Measure				Rig	ol DSA Pass	s/Fail Ma	ask Builder	
Find Instruments	3		USB0::0x1AB1	::0x096	0::DSA8A14120	00071::INST	F▼	
Select Pass Fail Line	2	<u>-</u>]						
Start frequency (MHz)	30							
Stop Frequency (MHz)	1000							
Frequency (Mhz)		Amplitude (dBm) -66.99			Add Limit Line		Reset PF Line	
30				19	7.95 -11.11			
230		-66.99 -59.99		19		- Cucanana		
230.000001				9	File Name	CISPR2	CISPR22A	
1000			-59.9	19				
					Store File			

11. Enter File Name and Store File Button to save the limit line to the internal storage of the instrument

