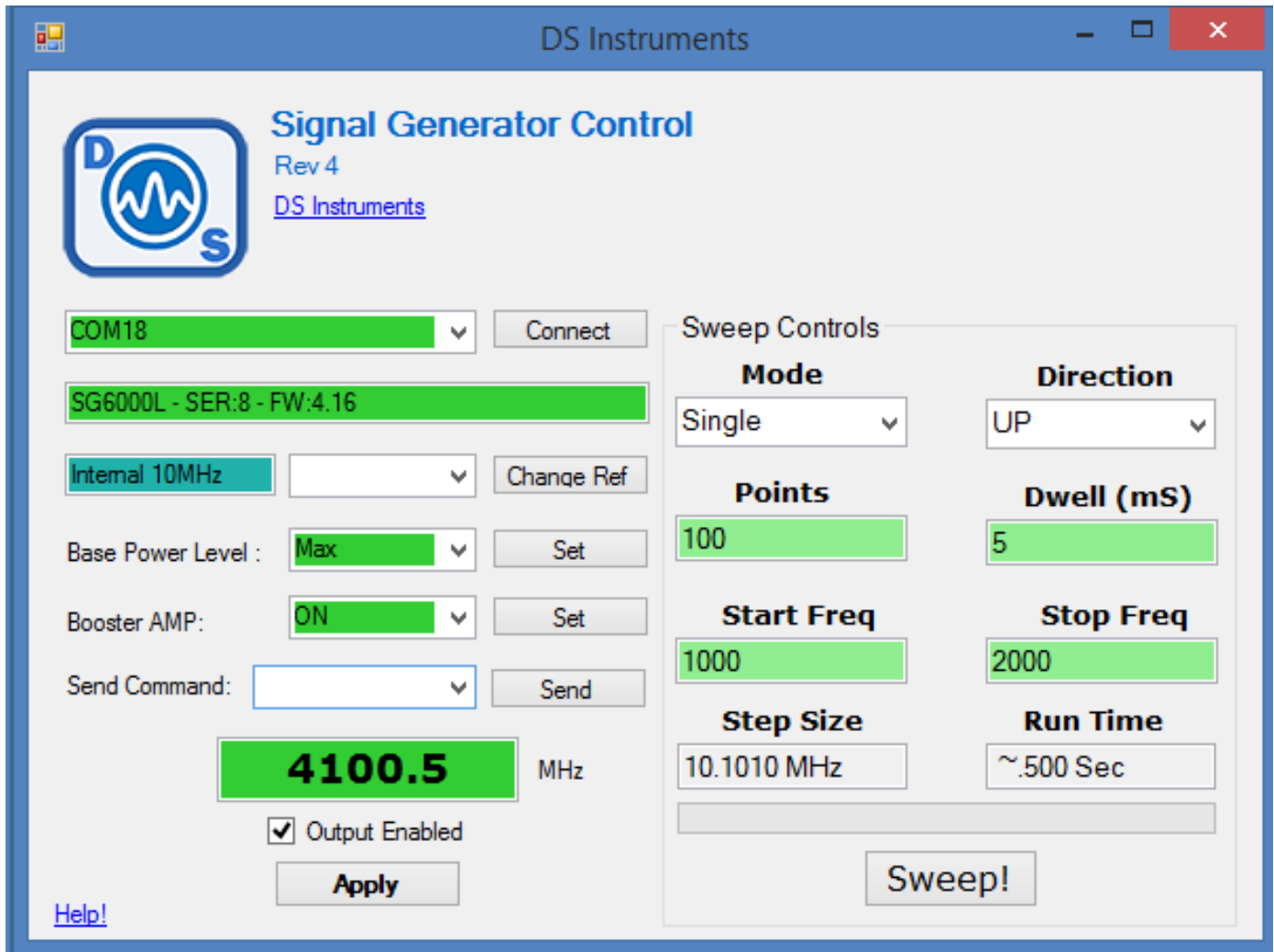# RF Signal Generator User Manual

Stand-Alone Use Quick Setup:

- Connect the SG to a standard USB port or 5 Volt power source using mini-usb cable. A desktop, laptop computer, or smart-phone charger will work. Avoid using unpowered USB hubs if possible.
- Connect an external 10MHz reference source to the rear REF SMA connector if desired. If no external source is detected, the unit will use its own internal source. Searching for an external frequency only occurs at boot-up, do not connect an external reference after the unit is already powered up.
- Press the red power button on the front left of the unit. The screen will display the model number and firmware version. The unit will beep indicating boot-up and the green power LED should light up.
- The unit is now ready to change frequency up and down using the two small step buttons.
- To toggle between integer step and fractional step, hold the MODE button down until there is a beep (0.5 seconds).
- The blue STATUS led indicates that the SG is successfully locked and outputting the desired frequency on the front SMA port. If an internal X2 is available (SG6000LD) output will be enabled when SG frequency is set to OVER 3.0GHz producing a 6.0GHz+ output.

SCPI/COM/Computer Control Use Quick Setup:

- Connect the SG to a standard computer USB port using mini-usb cable
- Connect an external 10MHz reference source to the rear REF SMA connector if desired. If no external source is detected, the unit will use its own internal source. Reference auto-detection can be overridden in the GUI if desired.
- Press the red power button on the front left of the unit. The screen will display the model number and firmware version. The unit will beep indicating boot-up and the green power LED should light up.
- Windows should now install the standard virtual COM port driver. Wait for this to complete.
- Download and open the DS Instruments Signal Generator Control GUI from the website.
- Select a COM port from the top select list and press CONNECT to try to control the unit. If the select box turns green then a connection has been established. The model number and firmware versions will appear in the green info box. If this box is turns red, the wrong COM port was selected or an error has occurred.
- At this point a user can enter a frequency and click APPLY or setup a frequency sweep.
- The blue STATUS led on the front of the SG unit indicates that the SG is successfully locked and outputting the desired frequency on the front SMA port. If an internal X2 is available (SG6000LD) output will be enabled when SG frequency is set to OVER 3.0GHz producing a 6.0GHz+ output.

- The physical control buttons will be disabled when a COM port connection is established to prevent any accidental bumping of the buttons when under computer control.

Advanced GUI Options

- If reference auto-detection is misbehaving with your input signal, it can be forced to external or internal using the select box and "Change Ref" button. A SG reset is recommended after this setting is changed.
- The "Base Power Level" option allows a user to adjust the power going into the internal booster amp up and down slightly. This will typically change the output power 1-3 dB depending on frequency.
- The "Booster Amp" option allows another way to slightly adjust the power level to a high or low setting. It is recommended to leave it on.
- "Send Command" allows a user to send a raw SCPI command to the Signal Generator.

Notes

- A complete SCPI command list is located on the website (https://www.dsinstruments.com/documents/)
- A full datasheet is available on the product page (https://www.dsinstruments.com/store/products/sg6000l/)
- Tech support email can be reached at **support@dsinstruments.com**

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