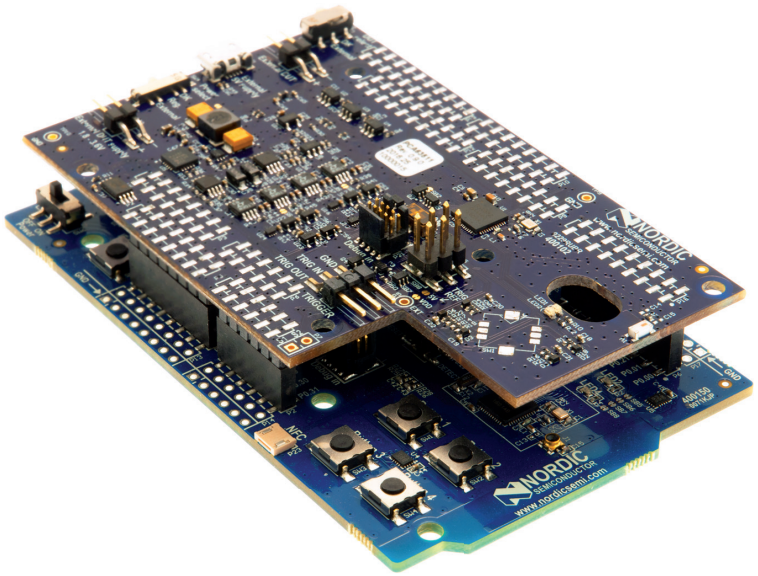
Power Profiler Kit

Current measurement tool for embedded development

Power Profiling made easy

The Power Profiler Kit is an easy-to-use tool for current measurements and power consumption optimization of embedded solutions. The Power Profiler Kit plugs directly onto the nRF51 DK and nRF52 DK through the Arduino Uno Revision 3 standard pin headers and the special power measurement header on these kits. This allows easy power optimization with a minimum of effort. There's also an additional connector for connecting to and measuring current on external boards, enabling you to measure current consumption on your final hardware. It supports VCC levels between 1.8 V and 3.3 V and has an onboard regulator that will supply up to 70 mA to external applications.



KEY FEATURES

- 0-70 mA current measurement range
- Down to 0.2 µA measurement resolution
- 77 kHz sampling rate
- Built-in programmable regulator with a 1.8 V to 3.6 V output range
- Support for external power supply with a 1.8 V to 3.6 V input range
- Measure current on nRF51 DK or nRF52 DK
- Measure current on custom boards
- Measure average current consumption up to 20 seconds
- Desktop application is available in Python allowing customization
- Export measurement data for post-processing

APPLICATIONS

- Power debugging of embedded applications
- Estimate battery lifetime of completed solution

KIT CONTENT

- Power Profiler Kit board
- Software and firmware files

NEEDED RESOURCES

- nRF51 DK or nRF52 DK

High accuracy and resolution analog measurement

The Power Profiler Kit has an advanced analog measurement unit with a high dynamic input range. This allows accurate current consumption measurements for the entire range typically seen in embedded applications based on nRF devices, all the way from single µA to tens of mA. For the lowest input range the resolution is 0.2 µA. The time resolution is also high enough to detect spikes.This is achieved by having a 77 kHz sampling rate of the current.

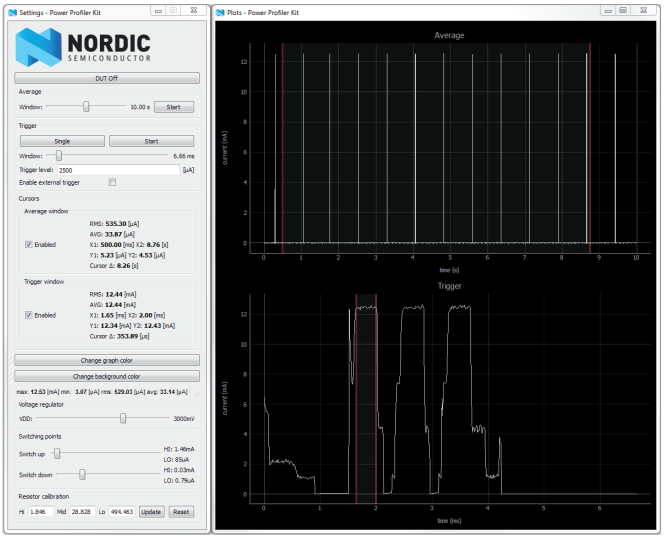
Improve debugging of code

The Power Profiler Kit supports both external trigger input and a trigger output. This makes it possible to combine the use of the Power Profiler Kit with oscilloscopes and logic analyzers. Code-synchronized measurements can be achieved by connecting the external trigger input to an I/O pin on the device being tested. This I/O pin must be configured to output a synchronization pulse.

Being able to synchronize current measurement with code makes it easier to spot software problems quickly.

Easy to use desktop application

The desktop application supporting the Power Profiler Kit provides several ways of assessing the power consumption, both instantaneous and averaged over a set time period. The kit can be configured to take readings over a period of up to 20 seconds, while simultaneously zooming in on a millisecond interval of interest. It is possible to measure instantaneous current for two separate points and at the same time measure the average current between the points. The points can be set separately for both windows at the same time. Measured data can also be exported for post processing.



ORDER INFORMATION

nRF6707	Power Profiler Kit, current measurement tool for embedded development