

Power Profiler Kit II

Current measurement tool for embedded development



Power Profiling made easy

The Power Profiler Kit II (PPK2) is an easy-to-use tool for current measurements and power consumption optimization of embedded solutions. The PPK2 connectors can be connected to any Nordic DK or custom board as a standalone unit, i.e. there are no requirements for additional kits or debuggers. The PPK2 supports both a source mode and an ampere meter mode.

In the source mode, shown as source measure unit (SMU) on the PCB, the PPK2 both supplies power and measures the current of the external device under test (DUT). The source mode has an on-board regulator capable of supplying up to 1A peak currents. Both modes support VCC levels between 0.8V and 5V. In the ampere meter mode, the DUT is powered by a separate power source.

High accuracy and resolution

The PPK2 has an advanced analog measurement unit with a high dynamic input range. This allows for accurate current consumption measurements for the entire range typically seen in embedded applications, all the way from 200nA to 1A. This allows measuring everything from Power Off mode of the DUT to the maximum power consumption of any Nordic DUT or external HW with headroom to spare for additional circuit draw, e.g. an nRF9160 DK with external sensors.

The resolution varies between 100nA and 1mA, depending on the current measurement range. The time resolution is also high enough to detect spikes. This is achieved by having a 100 kps sampling rate of the current, 10× the resolution of the long term view of our previous generation PPK.

Improve code debugging

The PPK2 includes support for 8 digital inputs that can be used as a low-end logic analyzer. This makes it possible to instrument the code and make it easy to link the power consumption to blocks of code being executed.

Key features

- 200nA to 1A current measurement range with a resolution that varies between 100nA and 1mA
- Source mode and ampere meter mode
- Source mode includes built-in programmable regulator with a 0.8V to 5V output range and up to 1A current supply
- 100 kps sampling rate (10 × greater than previous generation)
- Standalone unit
- 8 digital inputs for low-end logic analyzer support
- Measure instantaneous and average current on all Nordic DKs, in addition to custom boards
- Supported through nRF Connect for Desktop's Power Profiler app
- Export measurement data for post-processing

Applications

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

Kit content

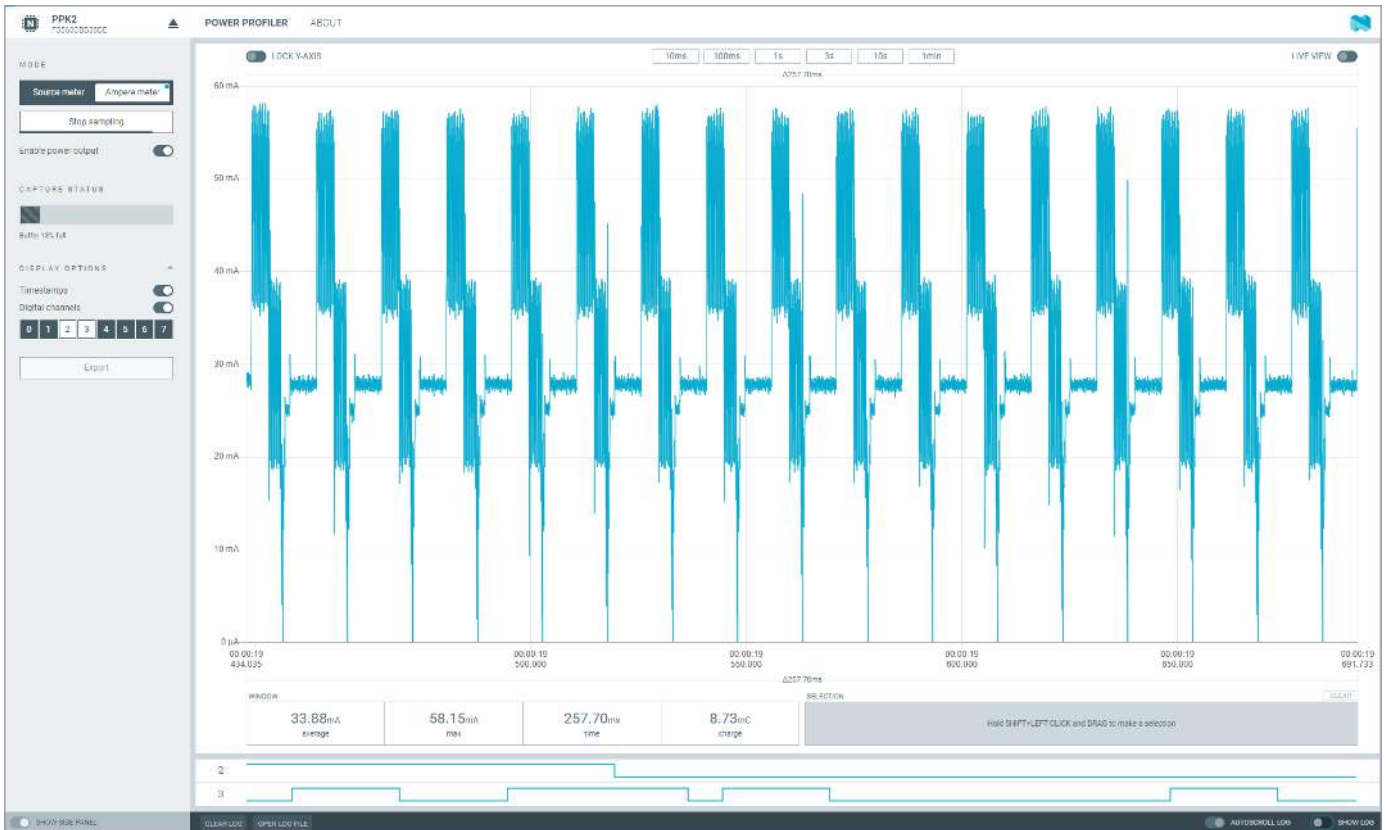
- Power Profiler Kit II board
- 4-pin current measurement cable, 10-pin logic port cable

Needed resources

- nRF Connect for Desktop's Power Profiler app

Order information

nRF-PPK2	Power Profiler Kit II, current measurement tool for embedded development
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Screenshot of the Power Profiler app running on the nRF9160 DK in ampere meter mode.

Easy to use desktop application

The PPK2 is supported by an [nRF Connect for Desktop](#) Power Profiler app for analyzing both average and instantaneous current consumption. It is possible to take readings over an extended duration, while simultaneously zooming in on a millisecond interval of interest. Measured data can also be exported for post-processing.

WORLD WIDE OFFICE LOCATIONS

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For more information:
Visit nordicsemi.com/products for full overview of our product range.

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Nordic Semiconductor specializes in ultra-low power Bluetooth Low Energy, Thread, Zigbee and proprietary 2.4 GHz, as well as LTE-M and NB-IoT wireless communication technologies for IoT.